REPORT OF THE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

FISCAL YEAR
1936-1937

MUNICIPAL RAILWAY
WATER DEPARTMENT
HETCH HETCHY WATER SUPPLY
HETCH HETCHY POWER SYSTEM
ELECTRIC POWER BUREAU
AIRPORT
LIGHTING OF STREETS
GAS AND ELECTRIC SUPPLY
RAPID TRANSIT

PUBLIC UTILITIES COMMISSIONERS AND DEPARTMENT HEADS

Front row, left to right: Fred Boeken, William H. Scott, John J. Sharon, L. T. McAfee, Nelson A. Eckart, Paul J. Ost, B. M. Doolin, Jackson T. Carle; second row, seated: Commissioners John P. McLaughlin, John H. McCallum, President Lewis F. Byington, Vice President George Filmer, Commissioner John P. Murphy; standing: A. F. Freitas, F. B. Gibbon, Secretary of the Commission, and Edward G. Cahill, Manager of Utilities.

REPORT OF

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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FISCAL YEAR 1936-1937

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COMMISSIONERS

LEWIS F. BYINGTON
President

GEORGE FILMER
Vice-President

JOHN P. MURPHY **JOHN H. McCALLUM**

JOHN P. McLAUGHLIN

•

EDWARD G. CAHILL
Manager of Utilities

•

FORREST B. GIBBON
Secretary of the Commission

JOHN J. SHARON
Director, Bureau of Accounts

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
287 City Hall

Honorable Angelo J. Rossi, March 2, 1938.
Mayor of the City and County of San Francisco,
City Hall,
San Francisco, California.

My dear Mayor:

The Public Utilities Commission of the City and County of San Francisco herewith transmits to you its annual report containing detailed statements of the operation of the various departments placed under its jurisdiction by the provisions of the Charter of the municipality.

The commission is given full control over the construction and operation of the San Francisco water department, the Hetch Hetchy water project, the San Francisco Municipal Railway, the San Francisco Airport, and is entrusted with the fixing, changing and adjusting of charges and fares in connection with the furnishing of service by the utilities under its jurisdiction. It also has power to enter into contracts for supplying heat, light and power for municipal purposes.

A careful perusal of the departmental reports will show an economical and efficient management of the utilities, a reduction in operating expenses, and a marked increase in receipts.

New schedules of rates for industrial consumers put into effect in the Water Department will broaden the scope of service and materially increase revenues. Provision is also being made for supplying many of the cities and communities between San Francisco and San Jose with an abundant supply of water from our Hetch Hetchy system. The construction work, by which the height of the O'Shaughnessy Dam in the Sierra Nevada Mountains will be raised 85 feet and its capacity increased seventy per cent, or to a total of over one hundred and seventeen billion gallons, is practically completed. In our local reservoirs, in the vicinity of San Francisco Bay, we have an all time record storage of nearly sixty billion gallons of water, sufficient to supply the needs of the community for three years, without being replenished by additional rainfall, thus rendering San Francisco safe from the danger of domestic or industrial scarcity or the ravages of fire. The reports show that, during the last year, there has been an increase in the revenues of the Municipal Railway of approximately 3% and a net income, after payment of operating expense, bond interest, depreciation and accident reserves, of $180,000.00. During the six years that the utility has been under the control and operation of the Public Utilities Commission, this profit in operation has taken the place of a prior yearly deficit of some $300,000.00, which deficit was reflected in the tax rate and paid from the pockets of the tax payers.

Extensive improvements have been made at the San Francisco Airport, during the last year, in the completion and paving of two new runways, the erection of a convenient and architecturally attractive administration building and in extensive development work for a seaplane harbor. The airmail handled increased twenty per cent over the previous year, the arrival and departure of air transport planes showed a gain of ten per cent. There was a total of 60,000 passengers carried, an increase of twelve per cent over any prior year.

Very respectfully yours,

Lewis F. Byington

President
Public Utilities Commission.

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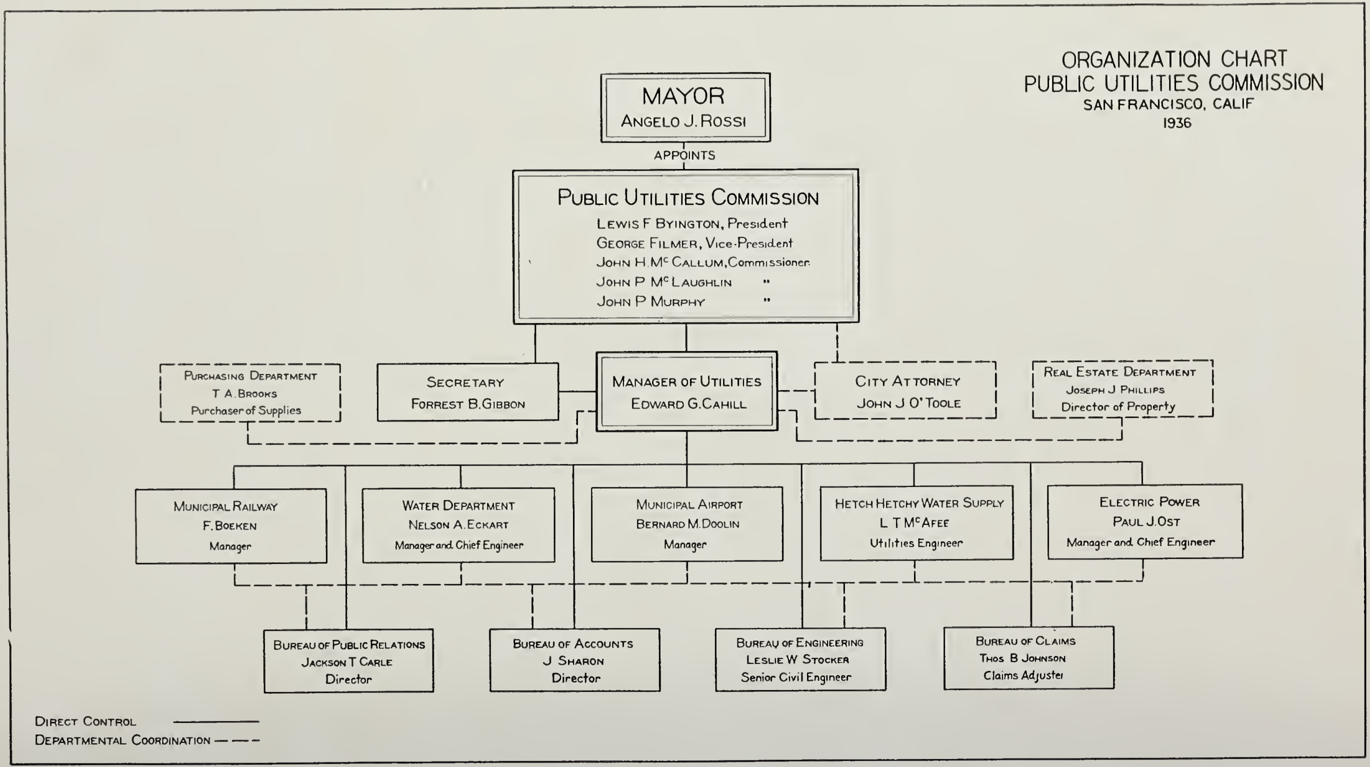
ORGANIZATION CHART
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO, CALIF
1936



REPORT OF THE
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

General:

San Francisco's municipally-owned public utilities made healthy progress during the fiscal year ended June 30, 1937.

New rate reductions, increased revenue and substantial progress on extensive construction programs for the various utilities marked the highlights of the year's operation.

Water Department:

Effective January 1, 1937, the Public Utilities Commission established a schedule providing lowered rates for new commercial and industrial consumers and for increased use of water by existing users. This reduction, the third in the six years of operation by the municipality, was designed to stimulate sales and increase revenues in order to make possible further general rate reductions. Sales outside of San Francisco showed an increase of more than 16% over the preceding year due in large part to this reduction.

Revenue from sales of water for the year amounted to $6,822,059, an increase of 4.74%, as compared with the fiscal year 1935-36. The net profit, after payment of all operating expense including bond interest, was $3,235,411. Of this amount $1,407,984 was turned over to the City's general fund to reduce taxes required for the operation of other City departments. In addition to this contribution to the general fund, the Water Department supplied other municipal departments, free of charge, with water which would have cost $421,262 at prevailing rates. This is in excess of the amount of taxes which would have been paid by the water system if it had been privately owned.

Up to the end of the fiscal year a total of $6,105,110 had been contributed to the general fund by the Water Department since March 30, 1930, when the city acquired the water system.

Water consumption for the system during the year 1936-37 averaged 58.5 million gallons per day, an increase of 3.7 million gallons per day over the 1935-36 consumption. On March 31, 1937, water in local storage reservoirs, exclusive of Hetch Hetchy, reached an all-time peak of 59,160,000,000 gallons, a sufficient supply to carry the City for approximately three years without additional rainfall.

The construction program under the $12,095,000 1933 Public Works Administration bond issue was 85% completed at the close of the fiscal year. Completion of the major improvements included in this program will insure reliable and improved water service to San Francisco's homes and business establishments and will give better fire protection to the entire City. More than one hundred miles of 2-inch mains, inadequate by reason of low pressure for either domestic supply or fire protection, have been replaced with 6-inch and 8-inch mains. Construction of two new distribution reservoirs will give a seven-day supply of water within the City in the event of breakage of transmission mains from main storage reservoirs.

Municipal Railway:

Operating revenue of the Municipal Railway for the year was $3,164,052, an increase of $91,444 or 2.98% over the preceding year. Operating expenses increased 1.5% by reason of additional street car service required to transport the larger number of patrons. Net income for the fiscal year after payment of all operating expenses, bond interest and depreciation and accident reserves, amounted to $179,729, as compared with a net income of $121,957 during the preceding year.

Construction of an extension to the "L" line of the Municipal Railway from Taraval Street to Wawona Street and 47th Avenue, where it will directly serve the adjacent recreational area, was 90% completed at the close of the fiscal year. This construction was a Works Progress Administration project with engineering, supervision and materials furnished by the Municipal Railway.

Over 1,000 linear feet of single track was reconstructed, and 33,975 square feet of asphalt paving was renewed by the Railway during the year. Major reconstruction projects included relaying of tracks on Market Street from Geary to Sansome streets and resetting of trolley poles on Van Ness Avenue from Market to North Point streets in connection with the widening of the street.

Hetch Hetchy Construction:

Construction work, raising the height of O'Shaughnessy Dam 85 feet, thus increasing the capacity of Hetch Hetchy reservoir by 70%, was 78.8% completed at the close of the fiscal year. It is anticipated that this $4,000,000 project will be completed during the fiscal year

1937-38. A diversion dam and conduit on Moccasin Creek at the Moccasin power house was completed on September 4, 1936, at a total cost of $200,789. This diversion dam will permit bypassing of the flood water of Moccasin Creek to avoid possible pollution of the Hetch Hetchy supply in the Moccasin re-regulating reservoir.

A total of 10,339,000,000 gallons of Hetch Hetchy water was delivered into local storage reservoirs during the year.

San Francisco Airport:

Air traffic at San Francisco Airport substantially increased. Arrivals and departures of air transport planes totaled 18,965 during the year. This is an increase of 10% over 1935-36. Total passengers carried increased 12%, from 53,079 to 59,358. Air mail handled by the municipal field increased 20% over the preceding year.

Major improvements at the Airport included the completion of paving on two runways, the construction of a modern administration building at a cost of $150,000 and the placing of approximately 112,000 cubic yards of fill necessary for the development of a seaplane harbor and facilities. It is expected that this seaplane harbor, when completed, will become the base for the trans-Pacific service of Pan American Airways and the headquarters for a Coast Guard flying base.

Utility Investment:

A consolidated balance sheet for the City's municipal utilities shows a total investment of $184,000,000 in these enterprises as of June 30, 1937.

All bond interest and redemption charges of the utilities were fully and promptly paid; reserve funds were provided in cash.

Electric Power Distribution:

In March, 1937, a plan for municipal distribution of electric power generated by the Hetch Hetchy system was submitted to the voters in the form of a charter amendment authorizing the issuance of $50,000,000 in revenue bonds for purchase or construction of the necessary distribution facilities in San Francisco and for the construction of an additional power plant at Red Mountain Bar on the Hetch Hetchy aqueduct. This amendment failed to pass, the vote being 65,762 in favor of, and 78,101 against the amendment as proposed. This power distribution proposal, known as Plan No. 7, had been approved by the Secretary of the Interior on December 16, 1936, as complying with the requirements of the Hetch Hetchy grant known as the Raker Act. On April 27, 1937, suit was brought against the City by the Attorney General of the United States in the United States District Court for the Northern District of California. This suit seeks to terminate the existing contract under which Hetch Hetchy power is distributed by the Pacific Gas and Electric Company on the ground that it is illegal under the provisions of the Raker Act. The action has not yet been brought to trial.

Street Lighting:

Street lighting improvements costing $290,000 were made during the fiscal year. One thousand two hundred and eighty-six new city-owned street lights were installed. A large part of this program was made necessary by the widening of streets and the creation of new arterials in connection with the San Francisco-Oakland and Golden Gate bridge traffic. At the close of the year 20,576 street lights were in service in San Francisco. The per capita cost of street lighting for the year was 91c in contrast with 93c during the preceding fiscal year and $1.28 for the fiscal year 1931-32.

Rapid Transit:

The rapid transit plan proposed by the Public Utilities Commission in its report dated May, 1936, was fully discussed in the annual report of the Commission for the fiscal year 1935-36. This plan, which includes construction of subways under Market, Mission, Geary and Montgomery streets with an extension from Mission and 24th streets through Bernal Cut on a separated right of way, has been the subject of debate by the Board of Supervisors during the entire fiscal year. Growing interest in transportation problems indicates that the rapid transit proposal will be submitted to the voters at the election to be held in November, 1937. On May 11, 1937, a supplemental report was submitted to the Board of Supervisors by the Public Utilities Commission. This supplemental report modified the original estimate by deducting $6,000,000 for interest during construction and adding the sum of $2,550,000 for fourteen crosstown bus lines extending the rapid transit service of the railway lines operating through the subways recommended in the May, 1936 report. There was also added to the Mission route a one-mile extension on a separated right of way to give direct service to the new San Francisco Junior College. As a result of this modification the estimate of cost was reduced from $52,700,000 to $49,250,000.

Commission Personnel:

The term of President Lewis F. Byington of the Public Utilities Commission expired on January 15, 1937. President Byington was immediately re-appointed by Mayor Angelo J. Rossi for a new four-year term. Effective the same day, Mr. Byington was unanimously re-elected to serve his sixth consecutive term as president of the Commission. Commissioner George Filmer was likewise re-elected as vice-president of the Commission. Both Commissioners have served respectively as president and vice-president of the Commission since its organization on January 8, 1932.

General Office:

The Public Utilities Commission held 34 regular, adjourned and special meetings during the fiscal year. The commission adopted 622 resolutions, approved 79 leases of City lands and awarded 47 contracts. Contract payments amounted to $6,312,638; a total of 43 contracts were approved as completed satisfactorily during the fiscal year.

Bureau of Public Relations:

The Bureau of Public Relations continued to function actively in acquainting citizens with the operation of the utilities, compilation of reports, adjustment of complaints and improvement of utility services. New publications issued by the Bureau included a booklet "San Francisco Airport—1937" and a series of Municipal Railway posters. A total of 19,624 column inches of articles about San Francisco municipal utilities were clipped from newspapers and other periodicals.

Audits:

Books and accounts of the various utilities under the jurisdiction of the Public Utilities Commission are audited annually by certified public accountants under the direction of the Controller of the City and County. In addition to these annual audits, the accounting bureau of the Commission and the Controller maintain a constant surveillance over the budgetary and bond expenditures of the utilities.

In succeeding sections of this volume will be found detailed reports of the activities and operations of each of the departments and bureaus under the jurisdiction of the Public Utilities Commission.

SAN FRANCISCO WATER DEPARTMENT

N. A. ECKART

General Manager and Chief Engineer

N. A. ECKART
General Manager and Chief Engineer
San Francisco Water Department

Water sales for the past fiscal year showed better than normal increase. Total sales amounted to $6,822,059—up $308,552 or 4.74 per cent. In an endeavor to stimulate sales and increase revenues in order to make possible further general rate reductions the Public Utilities Commission, effective January 1, 1937, established a schedule providing lower rates applicable to new business for users of large volumes of water. The results have been very satisfactory particularly in the Peninsula where a number of communities have abandoned the use of local wells for their water supply in order to avail themselves of San Francisco water. Sales outside of San Francisco showed an increase of more than 16 per cent over the preceding year, due in large degree to this progressive measure.

During the year, 10.3 billion gallons of water were delivered from Hetch Hetchy to the Peninsula system. This, with abundant rainfall, replenished the local storage reservoirs to the point of overflowing and as of March 31, 1937, the water in local storage reached an all-time peak of 59,160,000,000 gallons.

Approximately, 23 miles of pipe were added to the distributing system within the City and 2,321 new services were installed as compared with 1,648 in the previous year.

One new chlorinating station has been added to the system and the capacity of one of the other stations has been doubled.

Studies have been carried on with a view to providing treatment for the water to reduce the corrosive tendency of the softer water from Hetch Hetchy.

The construction program under the $12,095,000 1933 Public Works Administration Bond Issue has been advanced to such point that there now remains but four contracts to be completed—two, the Crystal Springs Pipe Line to Burlingame, and the Roof and Lining for the University Mound reservoir, being under construction and nearly 50 per cent complete.

Revenues from the walnut orchard grossed $27,385, the second largest yield since the City's acquisition of the properties.

Appreciation is expressed for the continued effort of the personnel of the organization to improve service and promote public relations.

CALAVERAS RESERVOIR
Filled for the first time March 30, 1937—31½ billion gallons.

WATER PRODUCTION

The draft on the water resources to meet consumption during the year 1936-37 averaged 58.5 million gallons per day. This is an increase of 3.7 million gallons per day over the 1935-36 draft, and 6.2 million gallons per day over the previous peak year of 1930-31.

Delivery of water from Hetch Hetchy averaged 28.2 million gallons per day, making a total of 35,562 million gallons of Hetch Hetchy delivered since October, 1934.

As forecast in last year's report, the delivery of Hetch Hetchy water to the Department's Peninsula reservoirs was very much curtailed as these reservoirs were replenished to the point of overflowing by an abundant runoff from the rains on the local watersheds. With only slight interruptions for maintenance work the Hetch Hetchy continued to deliver practically the full capacity of the San Joaquin pipe line from July 1 until October 22, 1936. From this date to December 31, delivery averaged about 25 million gallons daily and for the balance of the fiscal year the flow from Hetch Hetchy has been approximately 7 m.g.d., the smallest quantity which would maintain sweet water in the San Joaquin pipe line. No space will be available for storage of additional Hetch Hetchy water in the Department's reservoirs before April, 1938.

Rainfall Catchment and Storage:

Following a period of seven consecutive years of subnormal rainfall the past three years have witnessed normal precipitation on the local watersheds, resulting in a plentiful supply of water from the Department's Spring Valley water sources, sufficient, even excluding the deliveries from the Hetch Hetchy, to have brought the surface storage to an amount in excess of all previous records. The water in the Department's storage reservoirs reached a peak of 59,160 million gallons on March 31, 1937. On June 30, 1937, this quantity had been reduced to 52,643 million gallons. In addition to the above impounded quantity the Department increased the advance release to the Alameda County Water District by 5,273 million gallons during the year. The total advance release to the Alameda County Water District amounted to 11,652 million gallons up to June 30, 1937.

Except to provide local consumption for Pleasanton and Sunol, the Pleasanton wells were not operated during the year and there was further replenishment of this underground supply restoring the water table to within 22 feet of the ground surface on June 30, 1937.

Rainfall storage and consumption statistics, together with other data pertinent to the Water Department will be found appended to this report.

Transmission and Consumption:

San Francisco's water consumption averaged 55.1 million gallons per day during the year and the suburban consumption averaged 3.4 m.g.d. Of the San Francisco consumption, 36.6 million gallons per day were delivered to College Hill, Lake Honda and Stanford Heights reservoirs through the three transmission pipe lines having their sources at San Andres reservoir. 18.5 million gallons daily were delivered to University Mound reservoir from Crystal Springs reservoir through the two Crystal Springs pipe lines, the Millbrae-University Mound section of the new Crystal Springs Pipe Line No. 2 having been in operation since April 17, 1937. 3.4 million gallons per day were delivered to suburban consumers direct from the various transmission pipe lines.

An average of 29.5 million gallons per day was pumped from Crystal Springs reservoir and transported into San Andres reservoir through the Crystal Springs concrete-lined aqueduct. 22.4 million gallons per day were transferred from Calaveras reservoir through the Calaveras and Bay Division pipe lines into Crystal Springs reservoir. No water was transported across San Francisco Bay through the Alameda pipe line, the Belmont pumps having shut down in June, 1936, as mentioned in last year's report. A total of 64 million gallons of water from the Sunol filter beds was transported through the Niles-Irvington and Bay Division pipe lines and boosted into Crystal Springs by the Pulgas Pumps. The balance of the Sunol diversion was delivered to the Alameda County Water District under the determination of rights by the State Water Commission of 1920 and a recent supplemental agreement between the District and the Public Utilities Commission. The District received a total of 5,570 million gallons during the fiscal year, 3,951 million gallons of which were delivered through the Alameda pipe line, and the balance—1,619 million gallons—by the Government gauging station above Niles. Of the 5,570 million gallons delivered the District, 5,273 million

CALAVERAS RESERVOIR
Showing water within 3 inches of spilling. Storage 31½ billion gallons.

were advance release to the District and 297 million gallons were the amount due the District on account of the 1936-37 water catchment in Alameda system.

An average of 27.5 million gallons per day of Hetch Hetchy water was delivered into Crystal Springs reservoir and an average of .7 million gallons per day of Hetch Hetchy water diverted to the Sunol filter beds. The total delivery of Hetch Hetchy water to Crystal Springs was practically all made before December 31, 1936, and all the deliveries from Hetch Hetchy to Sunol filter beds were made after that date. After December, 1936, there was no space available in the Department's reservoirs for the storage of Hetch Hetchy water. During periods of very small flows of Hetch Hetchy water through the Coast Range aqueduct the water becomes so polluted by the crenothrix growth in the tunnel that it is not advisable to transport this water through the Bay Division pipe line as it would injuriously affect the quality of the water delivered to consumers along this pipe line, therefore, the small flows were diverted down Calaveras Creek and given a chance to aerate and purify before reaching the Sunol filter galleries. The quantity thus diverted amounted to an average of 7/10 million gallons daily.

Very satisfactory results have been obtained in clearing the Alameda-Irvington section of the tunnels of crenothrix by the chlorine and ammonia treatment of the Calaveras water transported through this tunnel section since November, and it is expected that the heavy crenothrix growth in the portion of the Coast Range tunnels east of Alameda Creek will also be eradicated when the Tesla chlorinator plant (now practically completed) is put in use, and allow even the low flows of Hetch Hetchy water to be delivered into Crystal Springs without injurious effect.

CRYSTAL SPRINGS PIPE LINE No. 2
View shows new 60″ pipe on left, and original pipe on right. Picture is at Brisbane Trestle.

NEW SIPHON
This 44″ steel pipe connects Stone Dam and Crystal Springs Aqueducts.

A marked change in the system operations relative to transporting water occurred in June, 1936. For the previous 48 years the Alameda pipe line had been utilized to transport 16 million gallons daily from Niles, Alameda County, across the bay and northward up the Peninsula to Millbrae, thence through the Crystal Springs pipe line into University Mound reservoir. When the operation of the Belmont pumping plant was abandoned in June, 1936, the use of the Alameda pipe line as a transmission pipe was also discontinued. The portions of this pipe line crossing the bay as submarine pipes, and portions adjacent to the Bay Crossing have not been in use during the past year and it is doubtful if these portions will ever again be used.

The portion of this line from Niles to Centerville, Alameda County, continued to be used to deliver water to the half dozen or so local consumers and, also, was utilized by the Alameda County Water District to transport water advanced by the Department to absorption areas near Centerville. During the year a formal lease of this portion of the Alameda pipe line for use for this purpose was entered into between the District and the Public Utilities Commission.

The portion of the Alameda pipe line along the Peninsula from San Carlos to Millbrae was used to supply water to the few local consumers, Crystal Springs water being run from Millbrae southward through the line for that purpose.

The 17,000 feet of the Alameda pipe line from Burlingame to Millbrae are now being incorporated as a portion of the Crystal Springs pipe line No. 2 now under construction. These 17,000 feet are 54 inches in diameter while the balance of the Alameda pipe line is 36 inches in diameter. It is understood that when originally constructed by the Spring Valley engineers in 1903, this larger size pipe was intended to be used for the purpose of transporting Crystal Springs water which now, 34 years later, it will do.

Operation and Maintenance:

With bringing in the Hetch Hetchy water supply it was anticipated that there necessarily would be a number of changes in the scheme of operation and utilization of San Francisco's water sources. Changes in plan of operation were progressive during the period 1934 to June, 1936, until during the past year, there has been adopted the present general plan of operation which probably will be followed for a number of years.

The principal changes in the plans of operation and utilization of the several sources since the purchase of the water system in 1930 are briefly as follows:

Discontinuance of the use of Lake Merced water and discontinuance of the operation of the pumps pumping this water except as an emergency reserve;

Discontinuance of the use of Sunset well water and the pumps delivering the same except as emergency reserve;

Discontinuance of the operation of Millbrae pumps and the transference of these pumping operations to Crystal Springs pumps;

Discontinuance of the operation of Belmont pumps and the use of the Alameda pipe line as a transmission pipe. Most of the water formerly transported by these latter facilities is now being delivered into Crystal Springs by gravity through the Calaveras and Bay Division pipe lines;

Discontinuance of the Pleasanton pumps and the transportation of Pleasanton well water to the Peninsula and San Francisco. When the Pleasanton underground supply is replenished this source will be utilized to supply a portion of the required releases to the Alameda County Water District;

Discontinuance of the transportation of Sunol filter bed water to the Peninsula and San Francisco for domestic consumption and diverting this water to the Alameda County Water District in lieu of water formerly released to the District from Calaveras reservoir. Calaveras water which formerly was either released to the District or was pumped at Belmont and Pulgas pumps is now transported through the Calaveras and Bay Division pipe lines into Crystal Springs reservoir by gravity.

Maintenance of the various sources of supply structures has continued substantially as in previous years, with the exception of the wooden flume aqueducts

RAISING PILARCITOS DAM—1866

This historic construction photograph is of particular interest because of the projected construction of a new overflow spillway during the coming fiscal year.

transporting water from Pilarcitos and Stone Dam. The usual expenditures for maintenance of these structures have not been made during recent years. In lieu of maintenance of these wooden structures one stretch of the Pilarcitos aqueduct was replaced with a 36″ and 28″ diameter steel pipe line 8,052 feet long.

Two thousand one hundred and seven feet of 44-inch diameter steel pipe siphon on the Stone Dam aqueduct were also replaced, and in June, 1937, the replacement of a 3,000-foot section of wooden flume on this aqueduct with a 48-inch diameter concrete pipe was started. The remaining portions of these aqueducts have not had the usual amount of maintenance work performed since acquisition by the City and should be replaced with permanent structures at an early date.

Pump Operations:

The Pleasanton pumps have scarcely been operated since October, 1934, except to supply the small Pleasanton and Sunol consumption—this has allowed the replenishment of underground supply. During the past year the water table raised 9 feet, being 13 feet below ground surface on May 12, and 22 feet on June 30. The Santa Rita road well from which water had been pumped during the past five years as a supply for the "Community" consumers of the Pleasanton Township County Water District, was not operated during the year as the water table had recovered to a point where the District could procure sufficient water from its regular wells for these consumers.

The well supplying the town of Pleasanton was pumped throughout the year except for about four months when the water table was of sufficient height so San Francisco was not obliged to supply water to the town. The small pump furnishing water for the town of Sunol operated without incident during the year.

Only one Pulgas pump was kept connected to the electric power and ready for emergency operation. This pump was used on 35 days during the year when the gravity flow through the Bay Division structures was interrupted for inspection and other incidental purposes.

As mentioned heretofore and in last year's report, Belmont pumps ceased operation in June, 1936. The Millbrae pumps have not operated for several years and probably will never be called upon to operate again.

The Crystal Springs pumping units lifting water into San Andres reservoir operated to 60 per cent of capacity during the year. Some of these units were practically in continuous operation except during flood periods when the Crystal Springs aqueduct was being used to capacity to transport flood water, or when the aqueduct was shut down for maintenance.

The Crystal Springs pump, used to boost the quantity of water transported through the Crystal Springs pipe line, was in use only the first four days of the year. On the other few occasions that the high level of the water in Crystal Springs reservoir would not produce the maximum required flow through the Crystal Springs pipe line, water from San Andres reservoir was by-passed into the pipe to make up the deficiency. With the increased capacity provided by the Crystal Springs pipe line No. 2 it is probable this booster pump will not be needed for many years to come.

Alameda County Water District's Release:

Negotiations were consummated during the year whereby the Department agrees to increase the advance release of water to the Alameda County Water

CRYSTAL SPRINGS DAM
With water at the spillway lip, March 25, 1937.

District to 15 billion gallons within six years, and in consideration of which the District agrees to relieve the Department of certain obligations of furnishing water to riparian owners along the Alameda pipe line within the District; the City reserves the right to recover water so advanced by pumping from wells should such procedure become desirable to provide an emergency supply for San Francisco. The total advance release to the District under this agreement was 11,652 billion gallons on July 1, 1937, about five and one-quarter billion gallons of which were advanced during the past year.

Reservoirs:

The water levels in the Calaveras reservoir and the three Peninsula reservoirs were all at the spillway elevations at the end of the rainy season. This marked the first time that the Calaveras reservoir had ever been full and the first time since March, 1911, that the Peninsula reservoirs had filled. The large quantity of water in these reservoirs has increased the area to be kept clear of weed growth within the reservoir basins. The work now required for removal of weed growths is more than double the amount required during recent years. The larger volume of water has also required increased quantities of copper sulphate for treatment in retarding the algae growths. Calaveras reservoir was treated once (May, 1937) using 28,000 pounds of copper sulphate. Lower Crystal Springs reservoir was treated twice, using a total of 19,800 pounds of copper sulphate; Upper Crystal Springs three times, using a total of 17,850 pounds; San Andres three times, using a total of 17,500 pounds, and Pilarcitos three times, using about 3,000 pounds.

The last copper sulphate treatment to Lower Crystal Springs was made with a new machine, designed and assembled by Mr. A. Hyne, a Department engineer, which allows a liquid solution of copper sulphate to be sprayed over the water surface. With this machine the quantity of copper sulphate is better regulated, the treatment is made much faster and requires less labor, and the diffusion is more uniform. The effect of this single treatment lasted much longer than a treatment made at the same time on the Upper Crystal Springs by the old sack method.

The roof of the Crystal Springs keepers' cottage was covered with fire-resisting shingles and the cottage wired and lighted by a half K. W., Kohler lighting plant. A similar lighting plant was installed at Pilarcitos cottage.

A new thirty g.p.m. Westco pump was installed to boost water from either the Crystal Springs aqueduct or the new 28″ Pilarcitos pipe into a new five thousand gallon steel water tank as a supply for San Andres cottage. A new launch was purchased to replace the old metal launch at San Andres. A new rangers' cottage, garage, stable, and water supply were built at Davis tunnel inlet and one of the rangers at Pilarcitos reservoir was moved to this location.

Pipe Lines:

All water transported through the transmission pipe lines was treated with chlorine as usual. Forty-one tons of chlorine and 10,500 pounds ammonia were used at Calaveras; 35 tons chlorine and 12,000 pounds ammonia at Irvington, 22,894 pounds chlorine at Crystal Springs, 17,117 pounds chlorine at Bald Hill and 41,630 pounds at North San Andres.

NEW CRYSTAL SPRINGS 60″ PIPE

The elimination of the Alameda pipe as a transmission line was responsible for a marked reduction in leaks in transmission pipe lines. There was one leak, due to electrolysis on the Niles-Irvington pipe and one on the Bay Division pipe line. On the 54″ North San Andres pipe line electrolysis leaks averaged about one per month.

There was a marked settlement of the most easterly three joints of the 42-inch submarine across San Francisco Bay at Dumbarton point. Investigation showed that the caps supporting the pipe joints had been eaten away by limnoria (a salt water bug). The pipe sections were jacked back into place and concrete caps were poured to replace the destroyed wooden caps.

A crack in the ground around the South "A" frame of the Sierra Point suspension bridge shows the bridge to be in a precarious condition. Temporary bents were first placed under the bridge to support the load in case of a slide. After close examination the section of

DAVIS TUNNEL RANGER'S COTTAGE BUILDINGS

pipe on the bridge was temporarily abandoned, and the line dead-ended on either side to prevent any damage or waste through the opening up of the line.

The 44″ Crystal Springs pipe from Millbrae to University Mound is temporarily out of service, but fortunately the new 60-inch pipe from Millbrae is in operation, taking care of the demand at the present time.

The Merced branch of the San Andres system has been practically out of service since the middle of April, the draft through this line varying from one half a million to one and a half million gallons per day.

Minor repairs have been made to pipe line trestles at Crystal Springs dam, South San Francisco and Brisbane.

The interior of the caisson in San Francisco Bay has been painted white, thereby eliminating the necessity of the lighting plant during the bright days.

The old gatehouse at Dumbarton Point has been painted and the valves and equipment above the floor level in the gatehouses on the Bay Division pipe line painted a straw color, which conforms to the color used on machinery at other stations.

The 36-inch gate valve at the Ravenswood pump station in the Alameda pipe line has been removed and brought to Millbrae.

With a view to putting this portion of the line into service for supplying the southern territory, tests have been made on sections of the Alameda line south of the Belmont pumping station to Ravenswood. The first four hundred feet south of Belmont will have to be abandoned on account of the number of leaks, but the balance of the distance, 13,700 feet to the south side of Broadway, Redwood City, has now been tested to withstand up to 70 pounds pressure. The next section tested was from 300 feet south of Five Points, Redwood City to the by-pass on Dumbarton Way, a distance of 8,150 feet. This was also tested to 70 pounds pressure. The balance of the pipe will be tested within the next few months.

Aqueducts:

The Crystal Springs pump aqueduct canal continues to evidence a number of leaks, a number of which we are unable to definitely locate due to the water traveling under the lining for some distance. These leaks give considerable trouble as they are apt to cause slides on the lower side of the canal and threaten serious damage to the canal.

No major repairs were made to the flumes, but the 44-inch siphon pipe from the north end of Section No. 3 of the Stone Dam aqueduct to the Crystal Springs pump flume, was replaced with new pipe. The sections of the Pilarcitos aqueduct flume and the 22-inch siphon pipes from the siphon at Tunnel No. 2 outlet to the San Andres reservoir were abandoned and a new pipe of 36-inch to 28-inch diameter laid to take their place, doubling the capacity of the old aqueduct.

Meter Service:

A 12-inch main was laid to the Municipal Airport and connected to the Crystal Springs and San Andres 44-inch transmission lines at El Camino Real, San Bruno. An 8-inch Sparling meter was installed to record the flow.

The City of Burlingame had an additional 4-inch service installed on the 54-inch Alameda line, and is now securing practically all of its water from the San Francisco supply.

Eleven 2″ meters were installed for new services and thirty-five meters of smaller capacity.

On account of highway changes quite a number of service lines in the Beresford district had to be lowered and moved out, to be clear of future paving.

CITY DISTRIBUTION DIVISION

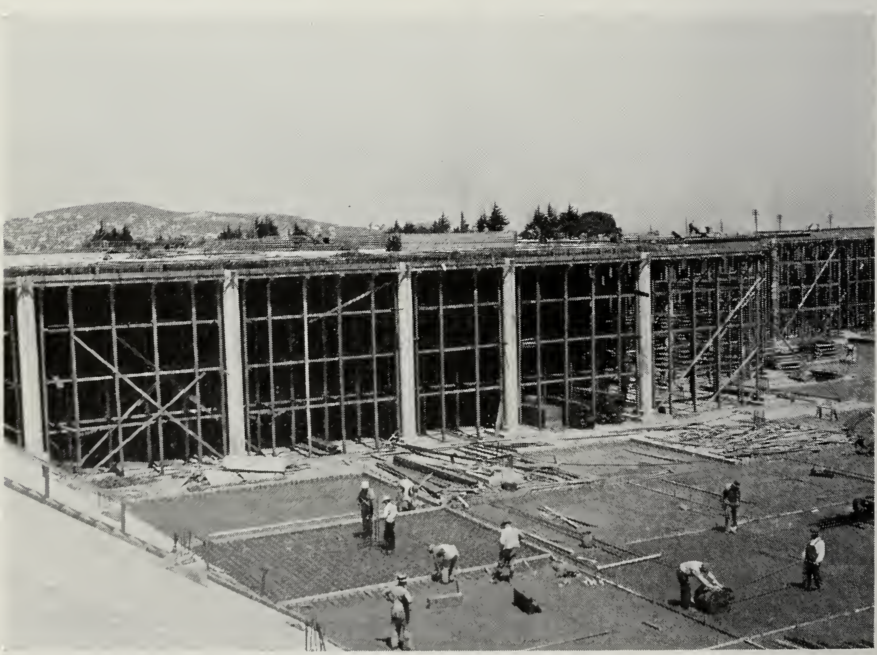
Water Consumption:

The average daily consumption during the year was greater than for any previous year in the history of the City, reaching the figure of 58,486,581 gallons. This is 6.7 per cent more than last year, which was the previous peak year with a consumption of a daily average of 54,810,665 gallons.

The increase in consumption occurred in all of the districts into which the distributing system is divided, the greatest gain being that of 14 per cent in the Forest Hill, the newest and highest residential and least, 2.3 per cent in the University Mound, the largest industrial district.

Operating Expenses:

The detailed costs of operating the Distribution Division are set forth elsewhere in this report. A general description of the work done in the Division and the conditions of the properties are given in the following paragraphs:



UNIVERSITY MOUND RESERVOIR
Lower view—Placing concrete lining and roof.

Upper view—Looking north, shows lining and roof construction in progress. This will increase the capacity of University Mound Reservoir to 140.9 million gallons providing seven days storage for the district served.

Transmission Mains:

The northern section of the Crystal Springs Transmission Line from Millbrae to University Mound reservoir was put into service on April 10, 1937. The old line within the limits of the City is in excellent condition.

The Baden-Merced line, which was shut down to permit construction of the Merced Manor was again put into service on November 5 to supply water for testing of the new reservoir.

The failure of an air valve to close caused a washout just north of the Ocean View gulch, which necessitated the replacing of about one hundred feet of the pipe.

The Lake Honda Transmission Line is in good condition as is also the San Andres Transmission No. 2. An old by-pass connection between the two lines broke on the morning of December 2, 1935, causing the destruction of the Lake Honda Booster Pump.

The old San Andres pipe line between San Jose Avenue and Ottawa Street is in bad condition. It is on a private right-of-way and must be replaced as soon as that area is developed.

City Reservoirs:

Water was first turned into the new Merced Manor reservoir on November 5, 1936. Central Pumps started taking its supply from there on December 8, 1936, and on March 15, 1937, the Oceanside District was transferred from the pressure regulators to the reservoir.

During the year both the South Basin of the University Mound reservoir and the Sunset reservoir were under construction.

The tanks and the other reservoirs are in good condition considering their age. The WPA forces completed the gardening at Lombard, making a very attractive park around the reservoir.

Lake Honda Screen House:

This plant has been in service all year and has had the necessary maintenance. The building is in fair condition.

Lake Merced:

No water was drawn from the lake during the past year. The storage increased from 1,569,107,000 to 1,850,615,000 gallons, a gain of 281,508,000 gallons which is an average yield of 771,254 gallons. The peak storage for the year was 1,896,062,000 gallons, being that from April 16 to 22 inclusive.

The forces of the Works Progress Administration have finished all but the paving of the boulevard around the lake.

San Mateo County was given permission to relocate the sewer from the treatment plant and a portion of the Vista Grande sewer across the flat south of the south lake by laying a pipe and abandoning a portion of the Vista Grande sewer flume.

Pumping Stations:

Central Pumps was operated throughout the year, pumping 2,652,123,000 gallons into the Stanford Heights reservoir. The pumps are running efficiently.

The maximum amount pumped during any one day was 7,990,000 on June 27, 1937. The pump has been taking water from the San Andres line most of the time, but for a short while got its supply from Merced Manor reservoir.

The Venturi meter was put into service on January 20, 1937 and gives an accurate measurement of the water pumped.

The Sunset Well system was not operated but is in good condition and can be started any time.

The use of water in the Twin Peaks district has increased to such an amount that it has been necessary to order a new larger pump which will be installed when it is received.

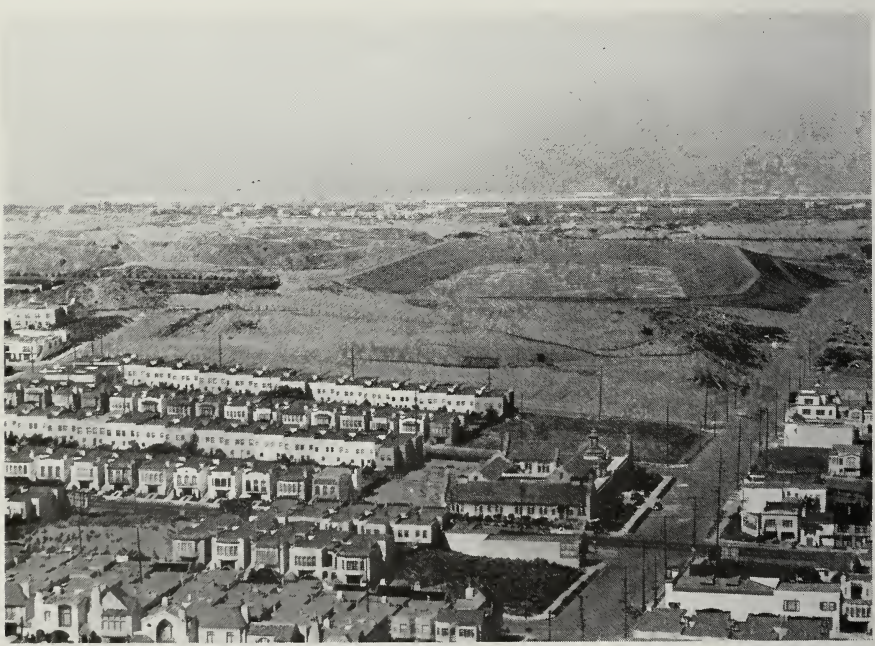
The other small electric pumps have run during the year and are in good shape.

Meter Expense:

The usual routine maintenance of meters and meter settings was carried on during the year. There were 4,569 meters changed and 1,391 brought home.

City Pipe System:

All of the extensions to the City Pipe System planned as a part of the Public Works Administration program under the 1933 Bond Issue was completed except for the discharge main from the Sunset Reservoir.



SUNSET RESERVOIR
Looking west, shows completed excavation and embankment ready for concrete lining and roof. This will add 90 million gallons storage within the City limits.

During the past year a total of 57,950 feet of cast iron pipe and 64,315 feet of steel pipe was laid. The largest single job was the Cross Town Line consisting of 12,130 feet of 36-inch and 5,565 feet of 44-inch pipe.

Street Department Expense:

The necessary work of blowing off dirty water, answering miscellaneous complaints was done during the year.

Repairs to Distribution Mains
Service Connection Repairs:

This necessary work was done on the main pipes and services. All work was of a routine nature.

Service Connections:

The number of services installed was 2,082 as against 1,548 for the previous year.

Machine Shop:

The machine shop has had a very busy year. The usual maintenance work was done on the automobiles, pumps and equipment, and all of the gate valves and such other miscellaneous material manufactured.

WATER PURIFICATION DIVISION

The activities of the Water Purification Division materially increased the past year due to a greater amount of necessary routine work and a number of new problems requiring special investigation. Study of the crenothrix growth in the Hetch Hetchy Aqueduct has been continued. A more intensive study of algæ growths and copper sulphate treatments for reservoirs has been conducted in connection with the use of a new copper sulphate feeding device.

The problem of pipe corrosion due to the introduction of soft Hetch Hetchy water has required considerable study.

Laboratory:

One of the rooms in the Millbrae pump building has been taken over by the Purification Division and equipped for office use by this Division. Some new equipment was purchased for the laboratory.

The electric wiring in the laboratory was changed placing all wires in conduit as a protection against fire.

The following is a tabulation of the samples examined in the laboratory during the year:

Bacteriological Examinations	4,243
Partial Chemical Analyses	1,145
Complete Mineral Analyses	34
Microscopical Examinations	375
Special Copper Determinations	40
Dissolved Oxygen Tests	350

Crenothrix Inoculations and Analyses	212
Examination of Wells and Other Sources	163
Corrosion Tests	1,869
Electrical Conductivity Tests	3,131
Soil Tests	38
Miscellaneous Field Chemical Tests	1,410
Nitrogen Cycle Determinations	23
Photodynamic Experiments on Media	311

The laboratory, which has been established and maintained in the Millbrae Pump building for the past six years is very much crowded and outgrown. It is more or less of a makeshift, as the building was never intended for laboratory purposes and it is not well suited for this use from a standpoint of convenience, lighting or ventilation. A new laboratory, with modern conveniences and properly laid out is badly needed to care for the increasing importance and activities of this division.

Chlorination:

Chlorination has been continuous at all of the regular chlorinating stations throughout the year. One new station has been added to the system and one of the other stations has been doubled in capacity. The new station located at Tesla Portal, the east end of the Coast Range tunnels, on the Hetch Hetchy Aqueduct, has been reported to be the largest chloramine treatment plant in the world. Chlorinating and ammoniating equipment consists of two 1,000-pound capacity master vacuum chlorinating machines and two 200-pound solution feed ammonia machines.

At the Irvington Portal station, two new chlorinating machines were added and one other machine was moved from Sunol and installed, making a total of five 300-pound capacity vacuum chlorinating machines and one 200-pound ammonia machine at this station. The enlargement of this station was necessary to provide for adequate treatment of the water flowing in both bay crossing pipe lines at their maximum capacity.

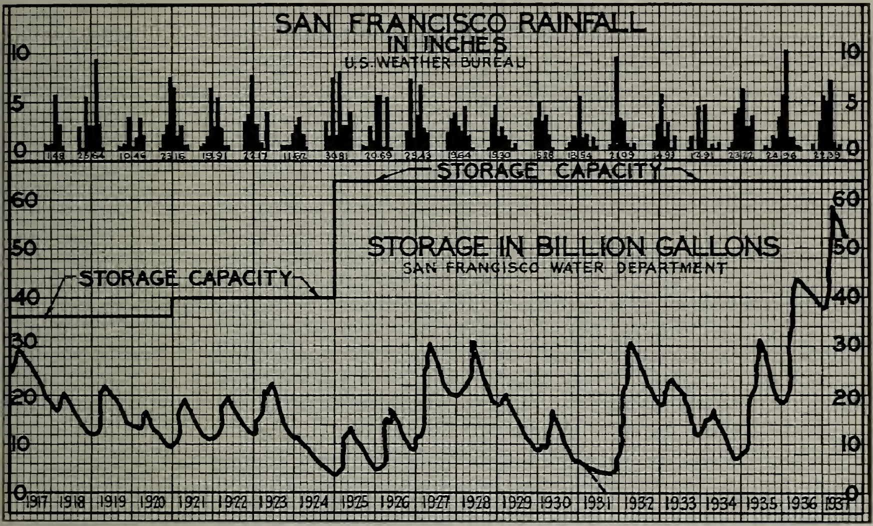
A 100-pound capacity solution feed ammonia machine was added to the equipment at the Crystal Springs station as protection against the possibility of slime growths forming in the Crystal Springs transmission line and to reduce tastes and odors incident to the chlorinating of unfiltered lake water.

At this time there is in operation, or in reserve, a total of 23 chlorinating machines and 6 ammoniating machines at twelve different stations throughout the system.

The portable chlorinating unit, which is kept at Millbrae for emergency use, has been used twice during the year, both times in connection with the sterilization of new mains and pipes at the San Francisco Airport.

Crenothrix Growths:

The crenothrix or slime growth in the Coast Range tunnels continues to be the object of intensive study and investigation. The new chlorinating and ammoniating station at Tesla Portal is now being completed and will be ready for operation within a very short time. It is expected that this station will control the growth throughout the 28 miles of Coast Range tunnel.



During the year, considerable experimental work was done using the Calaveras chlorinating plant and the Irvington plant to treat the flow through different sections of the Hetch Hetchy Aqueduct. The treatment of the Hetch Hetchy flow with the plant at Irvington was successful in clearing the Bay Crossing pipe lines of this slime growth.

On October 29, 1936, Calaveras water was turned into the Hetch Hetchy Aqueduct, being treated with chlorine and ammonia at the Calaveras outlet. Tunnel and pipe inspections on October 4, and December 18, 1936, showed the growth to be very much diminished and subsequent inspections have indicated its eradication from those portions of the Aqueduct through which these treated waters were passed.

The portion of the Hetch Hetchy tunnel from Alameda Creek to Tesla Portal was inspected several times during the year and it was found that the growth was flourishing in these tunnels undiminished.

The experimental treatment plant at Alameda Creek has been kept in operation throughout the year continuing the treatment of Hetch Hetchy and Calaveras water with copper sulphate and lime in varying amounts to determine the effectiveness of this treatment in overcoming the slime growth. This plant consists of eight 4-inch pipes each 300 feet long through which Calaveras and Hetch Hetchy water may be passed at velocities simulating tunnel conditions. A slime growth was allowed to form inside some of these pipes after which copper sulphate and lime were applied to the water in varying concentrations to determine the effect on this growth. Copper sulphate was applied in concentrations varying from 1.0 to 1.5 parts per million, lime being applied in concentrations of 5 to 10 parts per million in different pipes. Studies of the growth conditions in these pipes have indicated that copper sulphate and lime are not effective in eliminating this growth under these conditions. As a result of the above work, it appears that the chlorine ammonia treatment so far as known is the only satisfactory method of eliminating this growth.

The new Tesla plant should be effective in removing the growth from the long eastern section of the Coast Range tunnels as long as sufficient flow of water is maintained through the tunnel as to keep it full or nearly so. With very small tunnel flows the period of transit is so long that the effectiveness of the chemicals may be largely lost before reaching the lower end of the tunnel, but even under these conditions marked improvement over present conditions will result.

Corrosion:

The problem of pipe corrosion has become of immediate concern to the Department. During the past year, investigations and studies on the corrosion problems have been carried on. Corrosion of transmission lines, distribution mains, and house plumbing has been accentuated by the continued lowering of the hardness of the supply. With the low calcium and alkalinity and the pH values found, the supplies are much undersaturated with calcium carbonate, hence they tend to dissolve protective carbonate coatings and expose the metal to the action of the water. The investigations included:

1. Continuation of studies on rate of corrosion of test specimens of various metals suspended in reservoirs throughout the system.
2. Field and laboratory tests made to obtain data for calculation of the saturation index of the various sources. This saturation index indicates whether the water tends to deposit, dissolve, or not affect at all, any calcium carbonate deposit in the lines.
3. Operation of a full scale lime and limestone feeding plant at Hetch Hetchy Junction in order to ascertain the best treatment to overcome corrosion in the San Joaquin Valley pipe line of the Hetch Hetchy Aqueduct.
4. Investigation of corrosion complaints of consumers in the City. There have been some two dozen of these brought to our attention, varying

TESLA CHLORINATION PLANT

World's largest plant for applying chloramine treatment. Located at Tesla Portal, Hetch Hetchy Aqueduct.

from complaints of rusty colored water to cases of leaking pipes, boiler tubes that have burst, etc.

5. Sampling and studies of Crystal Springs water in the San Mateo System before and after lime treatment. This treatment is conducted by a private water company using Crystal Springs water, in order to control corrosion troubles arising from the increasing softness of the water.

Briefly, these respective studies have given the following results:

Corrosion Specimens:

Cast iron, black iron, steel, galvanized iron, and copper specimens suspended in water, were cleaned and weighed at monthly intervals to ascertain loss in weight due to corrosion. Seven hundred and twenty-five separate weighings were made during the year. The results indicate that these metals, arranged in order of their resistance to corrosion are, (1) copper, (2) galvanized iron, and (3) black iron, steel, and cast iron about the same.

In the order of their corrosive tendency the sources of supplies are as follows:

Hetch Hetchy
Peninsula Reservoirs
Calaveras.

Saturation Index Tests and Hetch Hetchy Lime Treatment Plant:

Determinations of pH, alkalinity, and calcium to compute saturation pH's were made on various sources throughout the year. In all, some 494 determinations were made. These studies included laboratory experiments with calcium carbonate and lime to determine dosages required to raise pH and alkalinity to various points. It appears that the following pH values must be attained with our various supplies in order to bring them to saturation with calcium carbonate:

	Sat. pH	Present pH
Peninsula Reservoirs	8.6	7.6
Calaveras Reservoirs	8.2	7.8
Hetch Hetchy	About 9.6	6.5

The Peninsula supplies could be so adjusted with a lime dosage of around twenty-five pounds of calcium oxide per million gallons. The Hetch Hetchy supply could be adjusted, at Hetch Hetchy Junction, by treating with six ppm. calcium hydroxide and 15 to 20 ppm. calcium carbonate. These doses would be 50 pounds of lime per m.g. and 125 to 170 pounds of limestone per m.g.

The Hetch Hetchy treatment is based upon results obtained at an experimental lime and limestone treatment plant installed at Hetch Hetchy Junction in January, 1937, and operated to the present time. Over 500 chemical tests have been made during this time. Further operation of the experimental plant may indicate that the lime and limestone dosages can be varied up or down to give better results and economy.

Corrosion Complaints:

Twenty-four cases of corrosion difficulties have been investigated in the City. Rusty water, staining of clothes during washing, failure of hot water pipes and boiler tubes in dwellings, apartment houses and office buildings were included.

Tests for dissolved oxygen and saturation index were made in these cases representing some 100 determinations, and established that corrosion was active and also more appreciable than in past years.

San Mateo Lime Treatment:

This community, served by the California Water Service Company, uses our Crystal Springs water directly in part of their distribution system. Since the advent of Hetch Hetchy water, they have experienced difficulty from corrosion and red water troubles in their distribution system. About six months ago, they installed a lime treatment plant treating our water at one station. With the addition of from 60 to 120 pounds of lime per million gallons they raised the pH of the water from 7.3 to 8.8. This value is maintained as high as 8.3 at the end of their system compared to 8.4 as the saturation pH for this water. Prior to the introduction of this treatment, they had received many complaints of rusty water, staining of clothes and porcelain fixtures. Since the treatment was started they have not received a single complaint in the section served with this treated water. They are now planning to introduce similar treatment in other points of their system supplied with our water. In some sections where this treatment has not been applied, our investigations have shown that the pH of the water is 7.3 to 7.5 and that the water shows a considerable increase in dissolved iron as the water is traced through the system from the reservoir to the end of the pipes.

The East Bay Municipal Utility District experienced similar difficulty when they introduced their Mokelumne supply. This water supply is very similar in characteristics to our Hetch Hetchy supply and after its introduction to the East Bay cities, they experienced active corrosion and many complaints of red water. In 1930 they began the treatment of the water with lime to raise the pH sufficiently to overcome this difficulty. Their treatment has averaged from 40 to 60 pounds of lime per million gallons and has raised the pH from 7.1 to 9.0. This treatment has resulted in a marked decrease in corrosion and a practical elimination of red water complaints. This treatment has been applied at their local filter plants. Early in 1936 examination showed that their main transmission line from Pardee Dam was showing active corrosion and as a result in May, 1936, they started treating their water with lime at Pardee Dam to protect this 88 mile long aqueduct. Results of this treatment indicated a marked decrease in the corrosive action of the water. (See curves showing hardness since the introduction of Hetch Hetchy water in San Francisco.)

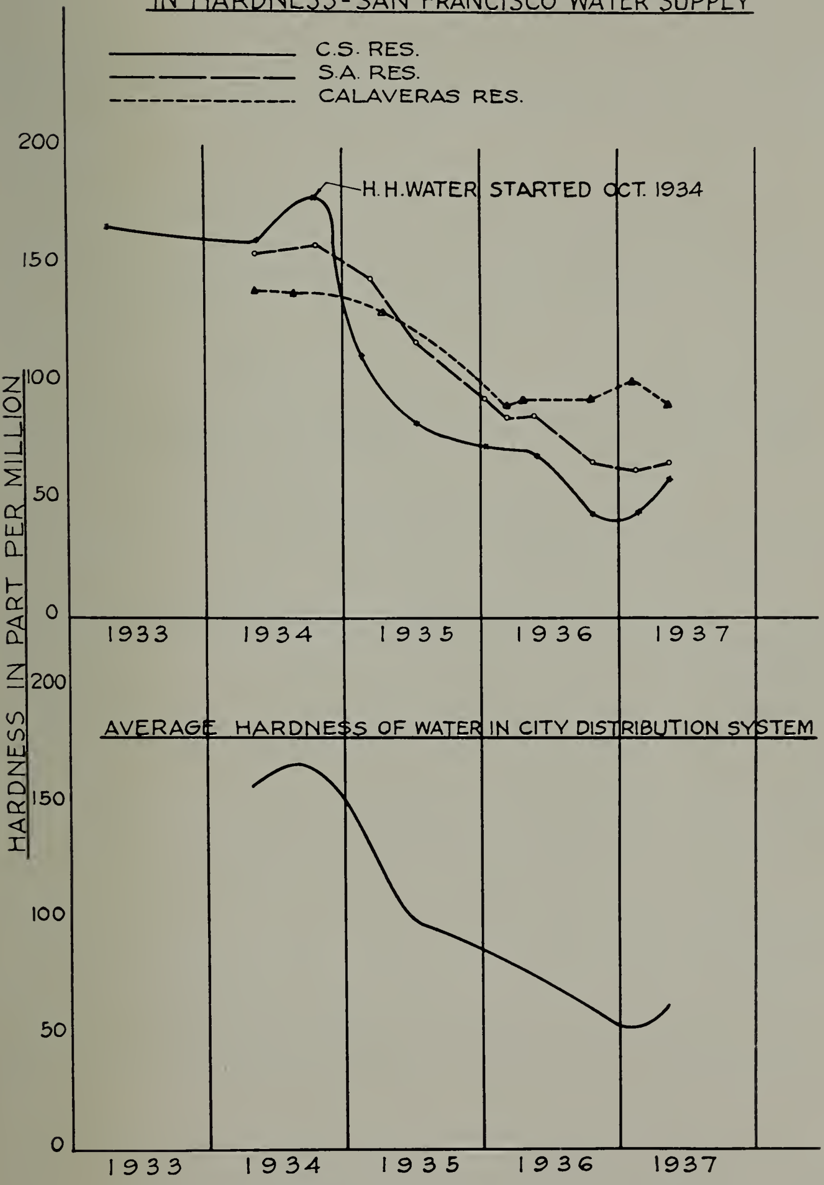
Algae and Weed Control:

All of the storage of the storage reservoirs has been maintained at fairly high levels throughout the year and the quality of water withdrawn has been satisfactory. Copper sulphate treatments have been made as required, averaging two treatments per reservoir for the year.

Microscopic examinations of the samples from the reservoir are made twice each week in the laboratory and the sample is then concentrated to measure the total number of organisms present volumetrically. The volume of catch in the reservoirs receiving Hetch Hetchy water has been less since the introduction of this new supply. This condition can probably be attributed to the fact that the Hetch Hetchy water contains a smaller amount of organic matter which supplies food for the algæ.

A new feeding device for applying copper sulphate to reservoirs has been developed by the Department and was used to some extent during the past year. The old method of applying copper sulphate was to place the crystals in cloth bags which were dragged through the water behind a launch, the water dissolving

CHARTS SHOWING CHANGES
IN HARDNESS-SAN FRANCISCO WATER SUPPLY



the crystals. This method was slow, inefficient, and did not give a good coverage of the reservoir. A new machine has been designed and built in our shops which applies the copper by means of spray nozzles above the surface of the water. The device consists of a small centrifugal pump operated by a gasoline engine which pumps water from the lake through an injector throat, the side arm of the throat being connected to a mechanical feeder which supplies a steady stream of small crystals of the chemical into the feeder. The water picks up these small crystals carrying them through the spray nozzles which are fastened across the back of the boat.

With this new method, it is possible to treat a reservoir in much less time and to get a more uniform covering of the reservoir surface.

The weed growth in San Andres reservoir, which gave so much trouble in 1933 and 1934, has not appeared since 1934. This is probably due to the reservoir being maintained at a high level which submerged the weeds to a sufficient depth that they did not grow prolifically; also, the larger quantity of water in the reservoir diluted the water to reduce the mineral content necessary for the growth of this particular weed.

Cross Connections:

Cross connections between water piping and other sources of water supply or sewer piping and other potential sources of water contamination continue to be a matter of concern. For the past year no active work in eliminating this source of contamination has been done due to a lack of personnel. The testing of the check valves which were installed in the campaign of two years ago, has been conducted at irregular intervals when time is permitted, but the extension of this survey has not been possible.

The hotel strike directed attention to the seriousness of this situation and resulted in a large increase in work for the Purification Division. As soon as the major hotels of the City were placed under strike conditions, the piping layout of these hotels was inspected for cross connections and other sources of contamination. It was found that a number of the larger hotels had some potentially hazardous cross connection within the building piping. Water samples from all these hotels were tested daily in the Water Department laboratory during the earlier period of the strike, the testing being conducted two or three times a week during the latter part of the strike. During this time, one case of contamination was picked up at one of the major hotels. The management of this hotel remedied the situation as soon as it was brought to its attention.

The importance of completing the cross connection survey as applied to sanitary systems before the 1939 Fair is emphasized by the experience of Chicago, where a serious epidemic of amœbic dysentery occurred in 1933 as the result of cross connections between the water supply and sanitary system, in two large hotels.

Some time ago, a survey was conducted over a portion of the downtown area in San Francisco which indicated that more than 30 per cent of the buildings in this area had dangerous cross connections within the building piping. Conditions are probably similar throughout the rest of the City.

Hetch Hetchy Construction Sanitation:

Supervision of sanitation at construction camps on the Hetch Hetchy Project has been conducted by the Water Purification Division. The disposal of wastes at the O'Shaughnessy Dam camp is carefully watched and the operation of the sewerage plant has been satisfactory throughout the year. Regular testing of the water supply at the construction camps has been conducted by the Division.

Complaints:

Complaints have been less numerous this year than at any time for the past eight years or more. The majority of complaints received at the present time are of dirty water or of rusty pipes.

An increasing number of rusty water complaints is being received. This is largely due to the introduction of the soft Hetch Hetchy supply. The treatment of the water with lime would not only eliminate these complaints but would also serve to protect the piping system.

Training School:

During the year, a training school for those employees whose duties are related to water treatment was conducted. The school consisted of four separate sessions held at about two-week intervals. The first three sessions were held in the laboratory at Millbrae and the fourth session consisted of a tour over part of the City and Peninsula systems.

At the first session, a general outline of the San Francisco water system was given followed by a lecture on the bacteriology of water. The subject of chlorination, and the operation and maintenance of chlorinating equipment was then discussed, pointing out problems which operators in this system have encountered, and suggesting ways in which the chlorination practice might be improved.

At the second session of the school, a general discussion of the chemistry of water was taken up, outlining the usual substances commonly found in water, and the tests that are made to determine the presence of these substances. The chemistry of water treatment was also outlined.

At the third session, a brief discussion was made on the subject of algæ and weed growths, after which the school was broken up into three groups and given actual demonstrations of chemical, bacteriological, and biological examinations of water. Microscopes were set up and the men were permitted to view common water organisms through them.

At the fourth session of the school, the group assembled at the Bryant Street Yard and then visited the College Hill and University Mound reservoirs in the City, the North San Andres outlet, San Andres and Crystal Springs Dam and Crystal Springs Pump Station and Pulgas Outfall in the Peninsula System. At these places, the men were told the functions of these various units in the water system.

The attendance at these meetings was very good, and the men expressed a keen interest in the course of instruction. The average attendance was thirty.

It is planned to conduct a school session of this type each year, reviewing the work of previous schools and taking up some new phase of water treatment.

In addition to this, Mr. Arnold, Chief Water Purification Engineer, has given a number of lectures in the main Office Building to which all of the Water Department employees were invited. These lectures have been on general subjects of water purification and treatment and have been quite well attended.

Soil Tests:

Soil Surveys were conducted along the route of the Crystal Springs, University Mound pipe Line No. 2, and along the route of the proposed Palo Alto pipe line to determine the soil characteristics. The type of protective coating on the pipe is based on the results of these surveys.

Test holes were dug at frequent intervals along the line, electrical resistance tests being made in the field and samples of the soil being brought into the laboratory where they were tested for hydrogen-ion concentration and other characteristics.

Electrolysis:

A complete electrolysis survey was conducted on the Bay Crossing pipe lines of the Hetch Hetchy Aqueduct. Trouble is experienced at times along this line with electrolytic action. Surveys were conducted to determine the source and intensity of current, its direction of flow, and the points where it returned to the ground. It is planned to install rectifiers along these lines to correct this trouble.

General Purification:

The Purification Division has cooperated with other Divisions of the Department and with other departments under the Public Utilities Commission in the supervision of sanitation, water treatment, and scientific investigation. A chlorinating machine was purchased for the water supply at the camp at Moccasin Power House. Some tests of water were made for the Hetch Hetchy Division and a large number of tests were made of the water supply used for the workmen on the Exposition Island. The Purification Division assists the Engineering Division in the design of new structures where sanitation or protection of the water supply is a factor.

REPORT OF LABORATORY EXAMINATION WEEK ENDING JULY 3, 1937

Sample Point	Max. Agar Count 37° C	Colon Bacillus 10cc. Por. No. Ex'd.	No. Pos.	% Pos. Year	Chemicals P.P.M. Alk	CL	Hard	pH	Turbidity	Date Sample Pos.
Early Intake	49	5	3	55.9	16	1	16	7.1	2	6-30
Priest Reservoir	4,200	5	0	45.7	14	1	6	6.9	2	
Moccasin Reservoir	5,000	5	4	58.0	16	1	6	7.1	3	6-30
Hetch Hetchy Aq. Bay X.	18	5	0	2.9	86	7	104	8.3	4	
Niles Reservoir	1	5	0	2.7	178	29	224	8.5	1	
Crystal Springs Lake	350	5	5	36.3	56	10	66	7.4	2	6-29
Crystal Springs Line	10	30	0	2.6	54	8	64	7.0	4	
Alameda Line, Belmont	4	5	0	0	58	10	68	7.5	2	
San Andres Lake	16	5	0	25.9	60	12	68	7.6	3	
San Andres Line	13	30	0	2.3	56	13	68	7.7	3	
N. San Andres Line	7	10	2	6.1	58	13	70	7.7	4	^{1}6-28 ^{1}7-1
Univ. Mound Inlet	4	10	0	3.6	58	11	66	7.7	4	
Univ. Mound Reservoir	6	10	3	12.9	58	10	68	7.7	6	^{2}6-28 ^{1}7-1
Univ. Mound Outlet	5	10	0	3.7	58	10	68	7.7	8	
Univ. Mound System	4	10	0	2.7	60	10	68	7.7	2	
College Hill Inlet	8	10	0	4.3	58	13	72	7.5	3	
College Hill Reservoir	9	10	4	47.5	58	12	70	7.5	3	7-1
College Hill Outlet	8	10	0	1.3	58	13	68	7.5	2	
College Hill System	3	10	0	5.8	58	13	70	7.5	2	
Lake Honda Inlet	4	10	0	3.5	58	13	68	7.7	5	
Lake Honda Reservoir	8	10	0	10.8	58	12	68	7.8	3	
Lake Honda Outlet	6	10	0	1.9	58	13	68	7.9	4	
Lake Honda System	9	10	0	2.7	56	13	66	7.7	4	
Central Reservoir	3	10	0	2.6	60	13	68	7.7	2	
Stanford Heights Reservoir	7	10	0	4.6	60	12	68	7.6	2	
Stanford Heights System	18	10	0	3.2	60	13	70	7.5	2	
S. F. Airport	6	10	0	8.8	58	10	66	7.8	2	

Remarks: All water supplied consumers conforms to standards.

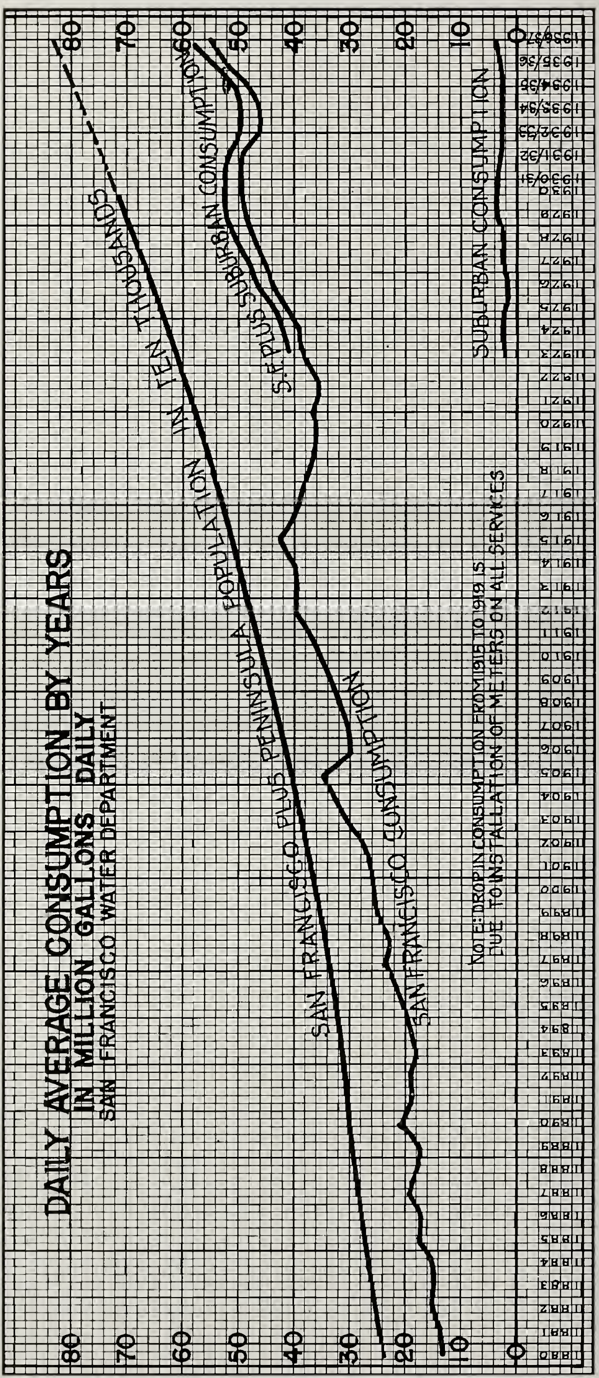
WATER SALES DIVISION

Gross water sales for the year were $6,849,648. Deduction of allowances, refunds and losses amounting to $27,589 leaves net sales of $6,822,059, an increase of $308,552 or 4.74 per cent as compared with the fiscal year 1935-36. Sales for the past six months of the period covered in this report were subject to "Special Rates" effective January 1, 1937, established as an inducement to promote the sale of "Surplus Water." For the same water deliveries, net sales would have totaled $6,851,962, an increase of $338,455 had not the new "Special Rates" been in effect. The result of these reduced rates is reflected in an apparent saving of $29,903 participated in by a monthly average of 263 consumers representing an average of 18 in the Suburban District and 245 in San Francisco. Of the total indicated saving Suburban Accounts represent $15,291. In connection with the sales record comparison of charges for the past two years is shown in Non-Paying Municipal Accounts. These sales for the year 1935-36 totaled $392,907 as against $421,262 for the year 1936-37, an increase of $28,355 which would be $31,084 at the old rates.

The total amount of bills in suspense is $4,649.31 most of which may be considered collectible. Bills written off during the period amounted to $4,855.58, a decrease from the previous year of $3,198.58. Of the total written off, $625.05 is accounted for in Board of Trade and Bankruptcy proceedings. During the past year the procedure with respect to write-off of items of this nature has been changed. Formerly all such accounts were written off and any dividends or remittances later received deducted from following requests for charges to Profit and Loss. Those accounts for which we receive dividends or partial payments from the Board of Trade or from Receivers are now held in active suspense until such time as they are definitely closed issues; any remaining unpaid balances are then included in write-off. Accounts totaling $906.31 are now being handled in this manner. If these accounts had been treated in the same manner as the previous year the comparison would be $1,531.36 as against $2,906.26 in 1935-36. The decrease evident from this comparison is due in part to generally improved economic conditions but also in considerable measure to the use that has been made of certain business notification service and a continued close follow-up by special collector of those accounts which indicate that the consumer may be experiencing financial difficulty.

The record of service and distributor installations shows 2,321 as against 1,815 last year, an increase of 506. This increase is slightly less than 47 per cent of that recorded during the year 1935-36 but is approximately 5 per cent more than the ratio of increase in frame building permits. There are 115,645 active services, all metered, of which 112,399 are revenue producing and 3,246 are temporarily shut off, an increase of 2,748.

Building permits issued for the year show a gain of 1,632, for an increase of $8,236,396. Permits issued for the year were 8,139 for a total of $22,758,733. Frame structures, almost wholly residential construction, account for 41 per cent of the value shown, indicating continued activity in home building. A marked decrease is again shown in Public, U. S. Government and State Buildings, as a group, but this is sharply offset by the gain in value of Office Building, Apartment House and 1939 Exposition construction. The activities of Builders and Contractors are closely followed and water deliveries carefully checked during construction and installation work. A total of 2,764 jobs were handled, reflecting an increase of 1,047 over the previous year. The work included inspection of an average of some 800 residences in course of construction, several new school buildings, large sewer installations, new high pressure fire lines, construction of


DAILY AVERAGE CONSUMPTION BY YEARS
IN MILLION GALLONS DAILY
SAN FRANCISCO WATER DEPARTMENT
SAN FRANCISCO PLUS PENINSULA POPULATION IN TEN THOUSANDS
S.F. PLUS SUBURBAN CONSUMPTION
SUBURBAN CONSUMPTION
SAN FRANCISCO CONSUMPTION
SUBURBAN CONSUMPTION
NOTE: DROP IN CONSUMPTION FROM 1915 TO 1919 IS
DUE TO INSTALLATION OF METERS ON ALL SERVICES
0
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1930/31
1931/32
1932/33
1933/34
1934/35
1935/36
1936/37

13 new fire cisterns of 75,000 gallons capacity each, contractors' installations of distributing mains and transmission mains for new reservoirs in the City, street widening, grading and paving in subdivisions and construction of new boulevards. In addition, daily contact was necessary with contractors engaged in the construction of our two bridges in order to give them water supply when and where required. In this connection, it is of interest to note the quantity of water used and the revenue produced. These are for the Golden Gate Bridge, from February, 1933, to June 30, 1937—5,510,018 cubic feet—$12,678.40, and for the San Francisco-Oakland Bay Bridge, from August, 1933, to December, 1936—3,673,000 cubic feet—$9,911.44.

Our collection record reflects but a slight change as compared with last year. The procedure remains the same with the exception that use has been made of a third shut-off collector whenever possible to do so in an endeavor to offset the loss of effort in this phase of collections due to the necessity of using one of these men for emergency relief when illness or accident has deprived us of the services of a shut-off man in the Service and Supply Section. The ratio of collections to net sales for last year was 94.5 per cent as against 93.8 per cent for the fiscal year 1936-37. Branch bank agencies numbering 92 collected 31.6 per cent of the total bills issued, an increase of nine-tenths of one per cent over last year, while regular department collectors handling 84.7 per cent of the bills issued, collected 30.5 per cent, an increase of two-tenths of one per cent. The average number of bills handled by regular collectors per man-day has increased from 227 last year to 231 and the average collected per man-day from 69 to 70. Activity of our motorized special collector continues to show favorable results, the record showing that 59.9 per cent of the total bills handled were collected as compared to 53.5 per cent the previous year, or a gain of 6.4 per cent. The average percentage of delinquent bills carrying unpaid balances of one month or more decreased 2.2 per cent in 1936-37. Results of consistent effort to reduce the amount of unpaid balances are shown in a percentage comparison of total delinquencies as follows: June 30, 1934—34.7 per cent; June 30, 1935—28.1 per cent; June 30, 1936—27.5 per cent; and June 30, 1937—25.3 per cent.

Throughout the past year bi-weekly meetings of employees have been held after office hours for the purpose of discussion and informal written tests with respect to Rules and Regulations of the Department. These sessions have had to do chiefly with matters directly related to the Water Sales Division but there has also been included general information concerning the Department as a whole. On three occasions interesting and helpful talks were made on protection of water supply, purification, and control of tastes and odors. It is hoped that sufficient attendance can be built up at these gatherings so that a definite plan can be made for a series of talks which would be helpful and assist in stimulating a keener appreciation of the obligation of our employees to render helpful and efficient service at all times. Some improvement has been noted in our dealings with the public, and constant effort continues in an endeavor to increase friendly relations.

Statistics and data relative to the activities of the Sales Division are appended.

ENGINEERING

During the past year the Engineering Department did all preliminary engineering work and prepared plans and specifications for twenty-nine contracts which were awarded at a total bid price of $2,269,230.54 and has performed engineering and inspection work on thirty-four jobs involving $2,550,904.44 of contract work completed during the year. In addition, surveys were made for a proposed pipe line from Redwood City to Palo Alto. Regular routine work in connection with operation and maintenance has been carried on generally although some of this work not of immediate importance has of necessity been temporarily deferred due to the press of new construction work.

Work on the $12,095,000, 1933 Public Works Administration Project, has been actively prosecuted. Total expenditures to June 30, 1937, were $10,087,544.29 with but four contracts remaining to be completed. Of these four items, two—the Crystal Springs pipe line to Burlingame, and the Roof and Lining for University Mound reservoir, are under construction and as of June 30, 1937, are respectively 55 per cent and 38 per cent complete; a contract for the third—the Sunset reservoir Roof and Lining—is about to be awarded and bids will be called for shortly on the remaining job—the Discharge Line from Sunset Reservoir. All work on this project will be completed by June 30, 1938.

Of the work originally contemplated in the $321,093—1935 PWA Project, all has been completed, and the Government has given one year's extension for the Department to do additional construction jobs to use up the balance of the Government grant.

The personnel has been reduced to correspond with the reduction in the amount of work to be done on the PWA Project as this program nears its completion.

Following, is a brief description of construction work performed during the year:

Contracts Let Under 1933 Bond Issue—PWA Docket 1510:

1. Bay Crossing Pipe Line No. 2—Contract No. 46:

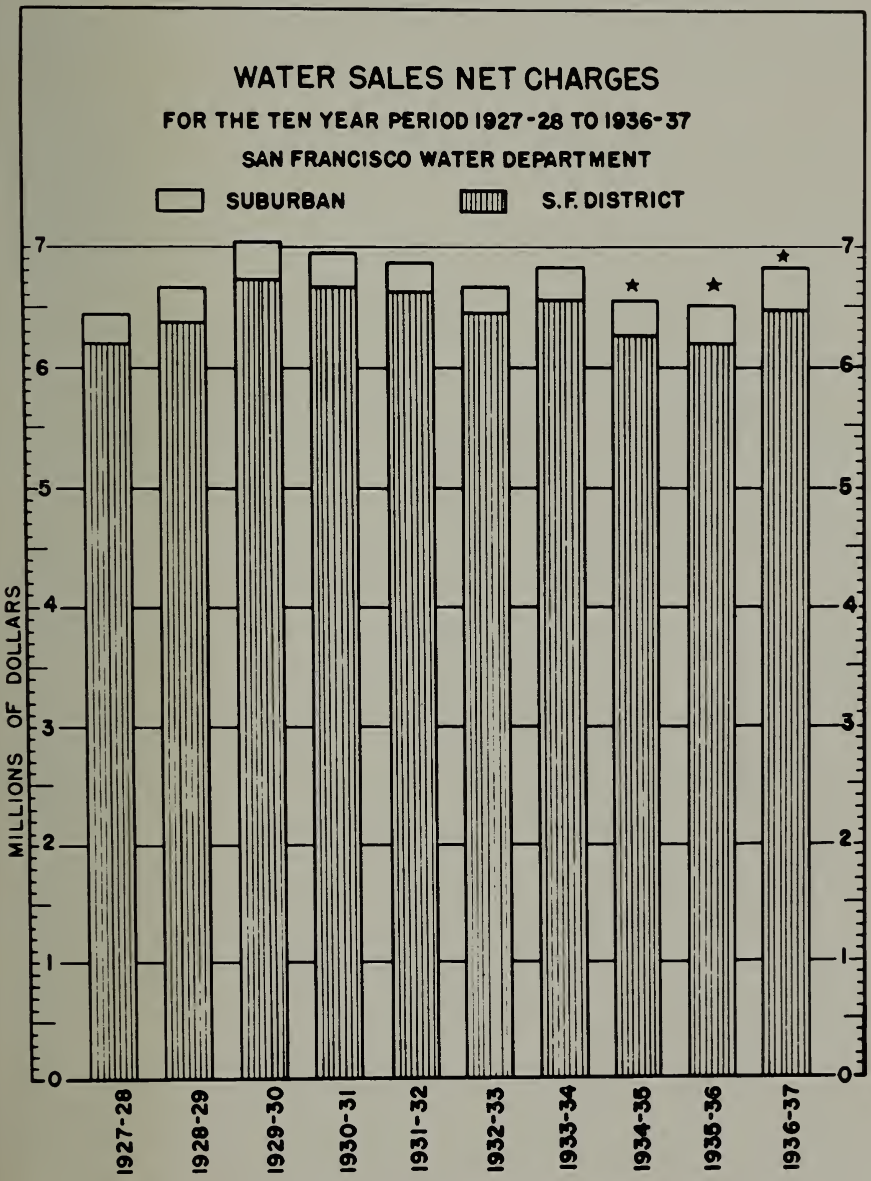
A description of this work has been included in previous reports. There was no work done during the current year as this line was completed June 22, 1936.

2. Crystal Springs-University Mound Pipe Line No. 2:

This unit of the P.W.A. program covers the construction of a new 60-inch pipe line from Crystal Springs reservoir to University Mound reservoir, utilizing the existing 54-inch Alameda pipe from Burlingame to Aqua. The construction work was let in four contracts, one for three tunnels between South San Francisco and University Mound; a second, for the Outlet Tunnel at Crystal Springs reservoir; a third for a 60-inch steel pipe line from Millbrae to University Mound reservoir; and the fourth, for a 60-inch steel pipe from Crystal Springs to Burlingame. The tunnel contracts were completed and described in last year's report. The pipe contracts are:

Contract No. 79—For the construction of the Crystal Springs Pipe Line No. 2—Millbrae to University Mound Section—was awarded to Youdall Construction Company on February 10, 1936, and completed April 26, 1937, for a total contract price of $1,274,315.31. A total of 55,246 feet of 60″ x ⅜″ welded steel pipe was installed, of which 1,926 feet is laid on wooden trestle.

Contract No. 112—For the construction of the Crystal Springs Pipe Line No. 2—Crystal Springs to Burlingame Section—and covering the laying of 24,620 feet of 60″ x ⅜″ welded steel pipe from Crystal Springs Dam to the existing 54-inch Alameda pipe at Burlingame will complete this unit of the PWA construction program.



WATER SALES NET CHARGES

FOR THE TEN YEAR PERIOD 1927-28 TO 1936-37

SAN FRANCISCO WATER DEPARTMENT

★ RATES REDUCED 10% ON DECEMBER 1, 1934

Included under this contract is the installation of control works in the new Crystal Springs Outlet Tower and the installation of 600 feet of 78″ x ½″ welded steel pipe in the outlet tunnel. This contract was awarded to Williams Bros. and Haas for an estimated amount of $644,185.95. As of June 30, 1937, work was 55 per cent complete.

3. University Mound Reservoir Addition:

This new basin with a capacity of 81.5 million gallons will be concrete lined and roofed. It occupies approximately six city blocks adjoining the University Mound reservoir and ranks among the largest covered reservoirs in the country. It will provide an additional four days' supply of water for the large down-town business and industrial area. The covering of the reservoir is in line with the modern trend in protecting water from contamination.

The work was let under two contracts. The contract for the excavation and embankment was completed, and described in last year's report.

Contract No. 111—Covers the construction of the concrete lining, concrete roof and the installation of the control works at the University Mound Reservoir Addition. The roof is of reinforced concrete, supported on columns spaced on 25-foot centers, having a maximum height of 28 feet. The total roof area is 491,000 square feet, or over eleven acres. A thorough study of various types of roofs was made and alternate bids were taken on light weight and standard concrete. The contract was awarded to MacDonald & Kahn Co., Ltd., on the estimated bid of $692,916.00 using standard concrete, the lowest bid on the alternate light weight concrete being $722,717.00.

The contract was awarded November 2, 1936, and was 38 per cent complete on June 30, 1937.

4. Sunset Reservoir and Connecting Pipes:

This unit of the P.W.A. program covers the construction of the first basin of a new reservoir in the Sunset Heights district and the installation of a 54-inch supply line and a 60-inch discharge line. The reservoir is to be concrete lined and roofed, similar to the University Mound addition, and will have a capacity of 90 million gallons, augmenting the 44 million gallons capacity of Lake Honda.

Four contracts cover this construction. The 54-inch Supply Line was completed and described in 1935.

Contract No. 110—For the Sunset Reservoir Excavation and Embankment, was awarded to Piombo Bros. on April 20, 1936, and was completed April 27, 1937, at a total contract price of $195,713.51. The work involved the excavating and placing in fill of 392,821 cubic yards of earth and rock and the excavation and disposal of 267,495 cubic yards of material.

The embankment was constructed of impervious material excavated from the site of the future proposed south basin. The same methods of compaction and laboratory control as were used at University Mound reservoir, resulted in a thoroughly consolidated embankment which withstood the heavy winter rains with little evidence of erosion, and no measurable settlement.

Contract No. 120—Provides for the concrete lining, roof and control works for this basin. Will be awarded in July, 1937.

Contract No. 108, for the 60-inch discharge line will be awarded in the fall of 1937.

5. *Extension of City Pipe System:*

This work was divided into thirty separate construction contracts. Thirty contracts have been let for this work. Twenty-three were completed and described in previous years. The following seven contracts were finished during the past year, bringing this unit of the P.W.A. work to completion:

Contract No. 80—Covered the construction of the Crosstown Pipe Line. This supply line, from the San Andres 54-inch pipe at Junipero Serra Boulevard and Holloway Street to the 36-inch College Hill pipe at San Jose Avenue and Brook Street, consists of 12,130 feet of 36″ x ¼″ and 5,565 feet of 44″ x $\frac{5}{16}$″ welded steel pipe. 11,192 feet of 36-inch pipe were reconditioned pipe from the Newark-San Lorenzo line. The balance of the pipe was new pipe furnished by the contractor.

The contract was awarded to MacDonald & Kahn Co., Ltd., on February 10, 1936, and completed November 17, 1936, for a contract price of $196,620.37.

Contract No. 100—For the construction of the Central Pumps Reservoir. A description of this 9,300,000 gallons concrete-lined and covered reservoir in Merced Manor was contained in last year's report. The contractor, MacDonald & Kahn Co., Ltd., completed the work for a total contract payment of $165,210.06 on December 31, 1936.

Contract No. 101—Awarded to MacDonald & Kahn Co., Ltd., on January 16, 1936, covering the furnishing and laying of 1,463 feet of 20-inch and 13,785 feet of 24-inch pipe feeder mains in various parts of the City. Work was completed August 25, 1936. Total contract price was $135,005.08.

Contract No. 104—For the laying of 6-inch and 8-inch cast iron mains in the Mission District was awarded to Pacific States Construction Company on January 27, 1936, and was completed August 5, 1936. The work involved the installation of 25,714 feet of 6-inch and 1,864 feet of 8-inch cast iron pipe for a total contract payment of $25,637.69. All pipe and fittings were furnished by the Department.

Contract No. 106—Covering the furnishing and laying of 20,690 feet of 20-inch steel pipe feeder mains in the Park-Presidio and Sunset Districts, was awarded to Lowrie Paving Company on February 10, 1936, and was completed November 11, 1936. The total contract payment was $128,243.55.

Contract No. 114—For the laying of 502 feet of 12-inch cast iron pipe in Harrison Street—First to Essex, was awarded to W. J. Tobin on July 13, 1936, and was completed August 18, 1936. Contract payment was $891.20. Pipe and fittings were furnished by the Department.

Contract No. 115—Involved the relocation of 471 feet of 20-inch steel pipe in Sloat Boulevard from 23rd to 25th Avenues, and was necessitated by the relocation of Sloat Boulevard. The contract was awarded to Charles L. Harney on July 13, 1936, and work was completed September 11, 1936, for a total contract cost of $3,130.39.

Contracts Let Under 1935 PWA Grant—Docket 1132:

Contract No. 107—For the replacement of portions of the Stone Dam and Pilarcitos aqueducts, was awarded to the Union Paving Company on June 29, 1936, and all work was completed January 27, 1937, at a total contract price of $112, 361.53.

The work performed included the replacement of 2,107 feet of 44-inch siphon on the Stone Dam aqueduct, installed in 1898, and the construction of 572 feet of

36-inch and 7,480 feet of 28-inch welded steel pipe, to replace Sections 2 to 7, inclusive, of the Pilarcitos aqueduct, constructed in 1887 and 1904.

Contract No. 119—Covered the building of 8½ miles of four-strand barbed wire fence on Redwood posts and pickets around portions of the Calaveras reservoir. This fence was necessary to keep cattle away from the reservoir area. The contract was awarded to the Anchor Post Fence Company on August 31, 1936, and the fence was completed on December 22, 1936, for a contract price of $4,705.05.

Contract No. 136—Covered the grading and paving of roads and foot walks, the construction of a 40′ x 120′ reinforced concrete pool and miscellaneous improvements at the outfall of the Pulgas Tunnel at Crystal Springs reservoir. Contract for this work was awarded to W. O. Tyson on January 25, 1937, and work was completed June 30, 1937, for a contract price of $7,304.78.

This work is the initial step in a program looking toward the ultimate construction of a commemorative temple and the conversion of this area into a garden spot where visitors may view the water from Hetch Hetchy pouring into the Crystal Springs reservoir, at the end of its long journey from the high Sierras.

6. *Extensions to the City Distribution System:*

The following fourteen contracts were let for extensions to distributing mains in San Francisco as part of the Department's regular extensions financed from revenues or under the Department's Refunding Rules. In all cases where cast iron pipe was laid the Department furnished the pipe and fittings in addition to the contract price. Also all material for services was furnished by the Department.

Contract No. 121—For the laying of 1,405 feet of 6-inch cast iron pipe in University Street and in Twin Peaks Boulevard, was awarded to W. J. Tobin on August 24, and completed September 18, 1936, for a contract price of $900.08.

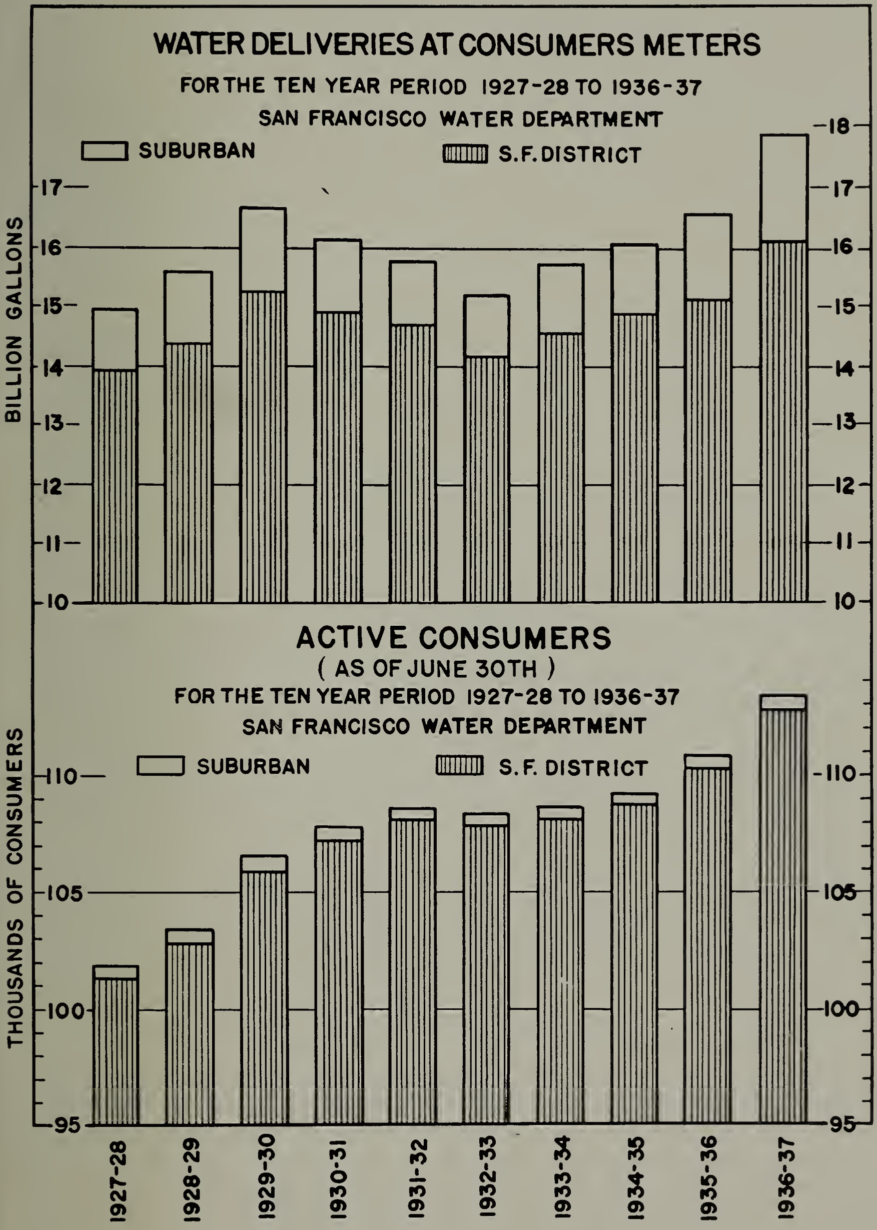
Contract No. 122—For the laying of 5,055 feet of 6-inch cast iron pipe in the Lakeside Subdivision, was awarded to M. J. Lynch on August 24, 1936. Work was completed for a total contract price of $1,553.82 on October 30, 1936.

Contract No. 125—For the laying of 1,710 feet of 2-inch and 2,433 feet of 6-inch cast iron pipe in University Terrace Subdivision, was awarded to the Fay Improvement Company on September 28, and work was completed December 17, 1936, for a contract price of $1,169.56.

Contract No. 126—Covered the laying of 2,966 feet of 8-inch cast iron pipe in the Hunter's Point and Golden Gate Heights districts. The contract was awarded to W. J. Tobin on September 28 and completed December 2, 1936, for a contract price of $2,677.53.

Contract No. 127—Covered the laying of 111 feet of 2-inch galvanized pipe and 1,150 feet of 2-inch cast iron pipe in San Jose Avenue, 504 feet of 4-inch cast iron pipe in Portola Drive and 396 feet of 6-inch cast iron pipe in 33rd Avenue. Also 17 ¾-inch services were installed. This work was awarded to W. J. Tobin on November 23, 1936, and completed January 3, 1937, for a contract price of $1,067.84.

Contract No. 129—For the laying of 438 feet of 6-inch cast iron pipe in 30th Avenue, was awarded to W. J. Tobin on an informal bid. Work was completed January 7, 1937, for a contract price of $354.30.


WATER DELIVERIES AT CONSUMERS METERS
FOR THE TEN YEAR PERIOD 1927-28 TO 1936-37
SAN FRANCISCO WATER DEPARTMENT
SUBURBAN
S.F. DISTRICT
BILLION GALLONS
10
11
12
13
14
15
16
17
18
ACTIVE CONSUMERS
(AS OF JUNE 30TH)
FOR THE TEN YEAR PERIOD 1927-28 TO 1936-37
SAN FRANCISCO WATER DEPARTMENT
SUBURBAN
S.F. DISTRICT
THOUSANDS OF CONSUMERS
95
100
105
110
1927-28
1928-29
1929-30
1930-31
1931-32
1932-33
1933-34
1934-35
1935-36
1936-37

Contract No. 130—For the laying of 302 feet of 4-inch cast iron pipe and 12 ¾-inch services in Normandie Terrace, was awarded to W. J. Tobin on an informal bid. Work was completed January 12, 1937, for a contract price of $284.78.

Contract No. 133—For the laying of 125 feet of 6-inch cast iron pipe for a fire service in Treat Avenue, was awarded to W. J. Tobin on an informal bid. Work was completed January 22, 1937, for a contract price of $622.32.

Contract No. 135—For the laying of 387 feet of 6-inch cast iron pipe and 9 ¾-inch services in 33rd and 45th avenues and 251 feet of 8-inch cast iron pipe and 4 ¾-inch services in Alemany Boulevard, was awarded to W. J. Tobin on an informal bid. Work was completed February 12, 1937, for a contract price of $650.02.

Contract No. 137—Covered the installation of 390 feet of 36-inch steel pipe for a connection between the City Pump Discharge main and the San Andres 54-inch transmission main at the county line and Junipero Serra Boulevard. This contract was awarded to the San Francisco Water Department on April 26, 1937, for an estimated price of $5,292.50. As of June 30 the work was 41 per cent complete.

Contract No. 138—Covering five small main extensions in various parts of the City, was awarded to E. J. Treacy on February 23, 1937, and completed April 12, 1937, for a contract price of $1,569.15. A total of 589 feet 4-inch, 616 feet of 6-inch and 229 feet of 8-inch cast iron pipe was laid and 13 ¾-inch services were installed.

Contract No. 139—Covered the relaying of 375 feet of 23-inch and 155 feet of 24-inch steel pipe in the City Pump Discharge main at Ocean View Gulch. The 23-inch pipe had previously been removed to allow for the construction of the Lake Merced Boulevard. The 24-inch pipe was also furnished by the Department. The contract for this work was awarded to the San Francisco Water Department on April 12 and completed May 15, 1937, at a contract cost of $1,386.62.

Contract No. 140—For the laying of 868 feet of 6-inch cast iron pipe and 43 ¾-inch services in Ulloa Street, was awarded to the Fay Improvement Company on an informal bid. Work was completed May 5, 1937, for a contract price of $586.20.

Contract No. 144—Covered the laying of 150 feet of 2-inch cast iron pipe in Emery Lane, 300 feet of 4-inch in Commercial Street and 320 feet of 6-inch, 260 feet of 8-inch and 13 ¾-inch services in Palmetto and St. Charles streets. This work was awarded to E. J. Treacy on June 14, 1937, for an estimated contract price of $1,229.90. As of June 30 work was 10 per cent complete.

7. *Additions to Supply and Transmission Facilities:*

Contract No. 131—Covered the construction of a rangers' cottage, barn, garage, cesspool, lighting plants and water supply, near the Davis tunnel on the Pilarcitos watershed in San Mateo County. The contract was awarded to L. Ubels on January 25, 1937, and was completed July 2, 1937, for a price of $11,614.00.

Contract No. 134—For the grading and paving of roadways at the Sunol Water Temple, was awarded to the Hayward Building Materials Company on January 25, 1937, and was completed April 24, 1937, at a contract price of $1,961.00. The work involved 8,200 square yards of grading and the placing of 9,400 square yards of ¾″ emulsified asphalt paving. This paving filled a long-felt need in improving the appearance of the Sunol grounds and ending the constant expense of maintaining the gravel roads.

Contract No. 141—For the removal of approximately 2,900 feet of wooden flume from the Stone Dam aqueduct and the replacement of same with a 48-inch reinforced concrete pipe line, was awarded to Sibley Grading and Teaming Company on May 5, 1937, for an estimated price of $34,709.50. As of June 30 this work was 3 per cent completed. Replacement of this section of wooden flume, installed in 1898, is a part of the program of complete replacement of the flume sections of this aqueduct, which carries water from the Pilarcitos watershed to San Andres reservoir.

Contract No. 143—Covering the removal of 245 feet and the laying of 335 feet of 30-inch steel pipe of the San Andres 30-inch pipe line in Holy Cross Cemetery, was awarded to Martin Murphy on May 12, 1937, for an estimated price of $5,097.50. As of June 30, 1937, this work was 3 per cent complete. Relocation of this pipe was necessitated by a proposed addition to the Cemetery Mausoleum.

Contract No. 145—Provides for the drilling of sixteen observation wells, 10 inches in diameter and ranging from 15 feet to 100 feet in depth at San Andres and Pilarcitos dams. This contract was awarded to Robert Garcia on June 14, 1937, for an estimated price of $4,120.00. Four wells are to be drilled at Pilarcitos Dam and twelve at the San Andres Dam. No work had been done at June 30.

8. *Miscellaneous Contracts:*

Contract No. 116—Covered the repaving of street and sidewalk openings made by the Department for installation or repair work during the fiscal year 1936-37. The contract was awarded to the Lowrie Paving Company on June 22, 1936, and terminated June 30, 1937. Contract payments under this contract totaled $35,717.32. Repaving over pipe trenches opened by contractors was not included, as each contractor provided for his own repaving under the various pipe-laying contracts.

Contract No. 117—For the painting of the exterior of the main office building at 425 Mason Street, was awarded to D. Zelinsky & Sons, Inc., on June 22, 1936. Work was completed July 29, 1936, for a contract price of $1,265.00.

Contract No. 132—Provided for Celotex acoustical treatment of the ceiling and part of the walls of the main floor, and the ceilings of Rooms 601 and 703 of the main office at 425 Mason Street. Contract for this work was awarded to the Western Asbestos Company on January 11, 1937, and completed March 1, 1937, for a contract price of $2,875.00.

AGRICULTURAL DIVISION

As of July 1, 1937, the land owned in fee was 63,843.284 acres, or a decrease of 5.540 acres from the acreage shown in the previous annual statement, which is accounted for as follows:

In San Francisco County—		
Purchase for Sunset Reservoir	12.453 acres	
Sale of Lakeview lot	.053 acres	
Net increase		12.400 acres

In San Mateo County—		
Purchase from Hillsborough Gate Subdivision	.310 acres	
Sale of southwest portion parcel 11	.280 acres	
Net increase		.030 acres
Total net increase		12.430 acres
In Alameda County—		
Sale in parcel 71		17.970 acres
Total decrease		5.540 acres

Of the total of 63,843.284 acres there are at present under lease about 34,709.207 acres, under 159 leases. The leased area is less than last year by about 42 acres which is accounted for principally by the change of several share crop leases at Pleasanton covering 525 acres into one cash rental lease of 485 acres for sugar beet growing, the 40 acres decrease being land not suitable for this purpose.

The following tabulation presents a summary of the Water Department's holdings and leases, showing the distribution of the acreage, number of tenants and rentals in the several counties:

SUMMARY

District	Total Acreage	Leased Acreage	No. of Leases	Cash Rentals	Share Crop Rentals
Alameda, Santa Clara Counties—					
Sunol District	37,158.600	33,708.100	54	$27,336.59	$9,388.43
Pleasanton District	873.030				
Niles	744.000	107.757	43	1,528.62	
Hetch Hetchy R/W	88.400	10.000	1	120.00	
	38,864.030	33,825.857	98	$28,985.21	$9,388.43
San Mateo County—					
Watershed	22,768.000	496.366	10	3,488.43	37.95
Taxes				845.90	
Outside Watershed	1,066.030	150.114	27	3,662.72	
Hetch Hetchy R/W	198.000	28.200	2	610.00	
	24,032.030	674.680	39	$8,608.05	$37.95
San Francisco County	946.400	208.670	22	3,610.50	
Taxes				971.25	
Grand Totals	63,842.460	34,709.207	159	$42,175.01	$9,426.48

In the above leased acreage there are included two areas (1) of 170 acres used by the Park Commission, from which no rental has ever been received by the Water Department, and (2) 138 acres in the original lease to the now defunct Municipal Properties Company, which lease is now held by the San Francisco Bank, from which no rentals or tax payments are being received. Also included is a lease to Spring Valley Company on 42 acres of land in the Pleasanton Strips at a rental of $1,606.50 per year. This lease includes the use of several wells for irrigation, which the Company has never used and with regard to which the Spring Valley Company, Ltd., is now negotiating with the City for a reduction in the amount of rental. The Spring Valley Company has recently sold a very considerable acreage adjoining the said Water Department strips and the lease should be cancelled and leases entered into with the purchasers where said lands adjoin the strips.

Of the leases taken over from the Spring Valley Water Company in 1930, three are still in existence, viz., Eaton and Smith on a month to month basis for

Parcel 31, San Francisco County Lands, (2) Empire Mines and Investment Company expiring October 12, 1970, for a portion of the Crystal Springs Watershed adjoining the former Bourn estate, now W. P. Roth, and (3) The Olympic Club expiring May 31, 1941, for a portion of the Lake Merced Lands adjoining the Lakeside Golf Course. In the matter of the sale by the Bourn Estate of the "Filoli" property at the south end of Crystal Springs Lake to W. P. Roth, arrangement should be made whereby the lease of the Empire Mines and Investment Company is transferred to the said W. P. Roth.

The principal change in rentals during the fiscal year 1936-37 was in the lease to the Grand Junction Sugar Company of 485 acres in the Pleasanton District, heretofore under share crop leases to various parties and now on a cash rental basis of $3,395.00 for the lease year ending October 31, 1937. This lease includes five former share crop leases and one cash rental lease, from which the revenues in 1935-36 amounted to $2,823.86. Therefore, the new cash rental lease shows an increase of $571.14 for the present lease year. On this lease the rate per acre for the present lease year is $7.50 which rate is due to the very poor condition of the land when it was taken over and the heavy expense necessary to destroy the excessive weed growth and to level the land before it could be planted to sugar beets. This area is in splendid condition at present and will produce a heavy crop due to the expenditure of time and money in thoroughly cultivating and preparing the land for crops. For the next lease year ending October 31, 1938, the rental rate will be $10.00 per acre, and for the following year $15.00 per acre. At the end of the three-year term this land will be in excellent condition for summer crops and should bring rates in excess of $15.00 per acre, on a share crop basis.

Due to an increase in the selling price of cattle for the lease year 1936-37, those grazing leases which are based on the selling price of cattle were increased 10 per cent over the minimum base rentals stated in the leases, resulting in increase of rental for these leases from $15,205 to $16,726. Rentals for the next lease year ending October 31, 1938, will also be increased on account of higher selling prices of slaughter cattle.

The amount of unpaid rentals on June 30, 1937, was $10.691.34, of which sum $2.926.10 is classed as non-agricultural and $7.765.24 as agricultural rentals. All of the latter amount is less than 90 days overdue, except one payment, and the greater part of these arrears will be paid during July as cattle men succeed in disposing of their marketable stock.

Share Crops:

The yield from the 1936 share crops was about one-third less than in the previous year, but due to the better prices which were obtained for the commodities the revenue therefrom showed an increase of $423.75.

The harvest of the Water Department share crops yielded, through sales to City Departments	$930.65
Sales to others	8,495.83
Total	$9,426.48

For the present crop year, which will be shown in next year's report, there will be quite a little decrease in share crops due to the leasing of 485 acres of land at Pleasanton, formerly on a share crop basis, to the Grand Junction Sugar Company on a cash rental basis as hereinbefore explained. One tenant at Sunol has a very considerable acreage in black eye beans this season. The crop appears to be in good condition and will, without doubt, prove more remunerative than hay and grain plantings. Encouragement is given in every possible manner to the share crop tenants for the growing of summer crops as this tends to bring about a material improvement in the farmed area with the possibility of higher returns.

Use of Lands Not Leased:

Nearly all of the Department property which is available for leasing and for which a suitable use can be found is at present under lease. Lands which can not be leased at the present time consist principally of marsh lands along the bay shore on both sides of San Francisco Bay and such areas as the Balboa Reservoir site which has been cut up by work done in 1931-32 for the reservoir, also Lake Merced lands of which a large portion has been taken for boulevard purposes. The policy of granting revocable permits for garden purposes for those portions of the Hetch Hetchy right of way through Peninsula residential subdivisions has been continued, making a total of twenty permits issued to date, which improves the appearance of the property and reduces our expense in eradicating weeds and rodents.

Walnut Orchard:

The crop for the year 1936 amounted to 187,605 pounds, which was approximately 11 per cent less than the previous year's yield. The Association, however, increased the base price on merchantable walnuts by one cent per pound and this, together with a material decrease in the quantity of culls and blows, produced a gross revenue of $27,385.40. This was a slight increase over the previous year's returns, all as shown in the statement hereinafter given. Final settlement for the 1936 crop will not be completed until September or October, 1937. However, the cash returns from the Association will be about $1,000 more than in the previous year.

The Walnut Code under the Agricultural Adjustment Act was continued as in previous years, and with the experience gained under this method of control increased returns to the growers have resulted. Of the total crop of merchantable walnuts, 25 per cent was delivered to the Control Board in 1936 as compared with 30 per cent in previous years. There is no doubt but that the decrease in the percentage of culls and blows was due to the thinning out of interlacing limbs, which work has been carried on for the past three years and was not completed until the spring of 1937. The entire orchard was fertilized during the past winter with sulphate of ammonia used at the rate of 500 pounds per acre. The orchard is now in excellent condition aside from die-back which affected some of the younger trees. The yield for the 1937 season will be larger than in 1936 and there is evidence that the nuts will be of higher quality. Payment for culls was at the same rate as in 1935, viz., six cents per pound.

CROPS AND VALUE DURING CITY OWNERSHIP

Year	Pounds Total Yield	Gross Value	Net Cash Paid by Association	Association Charges in % of Gross	Packing House Charges per Pound
1930	110,361	$23,905.44	$20,024.55	12.06	.0138
1931	91,570	13,778.73	12,272.73	10.90	.0091
1932	206,795	28,994.25	20,391.18	29.80	.007
1933	153,080	23,635.21	17,905.45	24.40**	.0073
1934	136,672	18,039.52	13,236.00	26.60**	.0059
1935	209,095	27,359.11	22,719.87	17.80**	.0045
1936	187,605	27,385.40	23,800.00*	13.50***	.0046

*Estimated.
**Includes 30% of crop delivered to Control Board and loss in sale of same.
***Includes 25% of crop delivered to Control Board and loss in sale of same.

The contract for harvesting the crop was awarded to C. H. Schween & Son of Pleasanton, the only bidder, at the rate of 2.7 cents per pound, the increase over the previous year being due to higher wage rate. The harvest proceeded in the usual satisfactory manner.

Care of Orchard:

It was possible to determine the effect of the fertilizer experiment applied to a portion of the orchard in the spring of 1935 as mentioned in the annual report for the year 1934-35. This shows an advantage in the use of ammonia sulphate as compared to a complete commercial fertilizer. This result was also borne out by the experiments of other walnut growers and by investigations of the Association. Therefore, the fertilizing of the entire orchard with this material, as mentioned above, was carried out this past spring. The entire orchard was sprayed during the winter with oil emulsion as usual. The treatment with Bordeaux Mixture for blight was confined to that portion of the orchard on which this disease was usually apparent, with the result that the present crop shows no evidence of the disease. The infestation of the walnut aphis was, however, heavier than for several years past and made several dustings of the orchard necessary. As a matter of interest the Association reports that the quality of the 1936 crop was, on the average, the poorest that it had ever handled. No explanation can be given for this condition, which was common throughout the State. The merchantable walnuts of our crop for 1936 was considerably below our average in quality but the decrease in the quantity of culls and blows, which was the lowest for the past four years, aided materially in increasing the total returns. The California Walnut Growers Association estimates the 1937 crop for the State at about fifty-six thousand tons, which is an increase of about 20 per cent over last year's yield. This will, of course, result in lower prices. However, with the continuation of the Walnut Code under the Agricultural Adjustment Act we can look forward to a fair return.

Fencing and Boundary Lines:

No further surveys of boundary lines in Alameda or Santa Clara counties were made during this past fiscal year and reference is made to the 1935 annual report as to the extent of these surveys. Boundary line fencing was continued from that portion of the Rodrigues line in Section 1/6S/1E where previously there had been no fence. New fencing was also constructed on the line adjacent to the A. F. Kirschner property. On a small portion of this line there had been no fence on the boundary. B. F. Van Horn, who is the adjoining owner in Section 9 and 10/6S/2E, has expressed his willingness to construct a fence on the boundary line, using pickets instead of posts except at the corners. In those portions of Alameda and Santa Clara counties where transportation is difficult and the character of the country steep and rough, picket fences should be satisfactory.

Attention is again called to the fencing along county roads within the properties. All of these fences should be replaced with the standard type of fence, especially the Calaveras Road which is used to a very considerable extent, the fences along which are in very bad shape so that tenants' cattle are continually breaking through.

Care of Properties:

The control of noxious weeds has been continued as in the past with the exception of the infestation of Star Thistle in the Calaveras Valley. Previous reports have mentioned this latter matter in detail. The control of ground squirrels in cooperation with the authorities of Santa Clara and Alameda counties has been continued and not only Water Department properties but adjacent land ownerships are in better condition than for some years past.

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained strictly in accordance with the requirements of the State Railroad Commission and Section 64 of the Charter, which provides for supervision and control by the Controller and the accounts of the Department have been so coordinated with the Controller's system that no encumbrance against the Budget can be incurred without prior certification from the Controller that funds are available.

COMMENTS ON FINANCIAL STATEMENTS
GENERAL BALANCE SHEET
EXHIBIT A

Fixed Capital in Service—$46,747,226.68

Detail of this account is shown on Schedule No. 1. Note that the balance in Depreciation Reserve Account as of June 30, 1937, is $516,887.94.

Fixed Capital Under Construction—$10,190,523.32

This account is made up principally of PWA Project 1510 and is shown in detail on Schedule No. 2. While a major portion of this construction has been put in service, the combining of the accounts with the other Fixed Capital Accounts of the Water Department is at this time impracticable. When the entire project, amounting to $12,094,859, has been completed, the accounts will be combined.

Cash—$5,739,243.63

This account is supported by Schedule No. 3. Funds were provided by sale of bonds of the 1933 Water Distribution Bond Issue and by appropriations from Water Department Surplus, by the Board of Supervisors, for the remaining funds.

General Manager's Revolving Fund—$30,000.00

This fund was created and is maintained for payment of small injury and damage claims, employees' expense accounts, reimbursing consumers for guarantee deposits and for adjustment and allowances in Water Sales Division.

The fund is deposited in the Bank of America in three separate accounts, except for $2,750, which is distributed as follows:

$1,900	Water Sales Division—for small change.
300	Superintendent Peninsula Division.
150	Superintendent City Distribution Division.
200	General Cashier.
200	Superintendent Alameda Division.

An audit of these accounts was made as of June 30, 1937, and they were found to be correct.

Accounts Receivable—$774,820.13

This account is made up principally of Consumers' Accounts Receivable, $525,143.38, and Federal Grants—Unaudited. Other Accounts Receivable amount to $24,804.75, a decrease of $8,517.97 over previous year.

Intra Fund Accounts Receivable—$644,543.89

Analysis of this account is shown in Schedule No. 4.

INCOME STATEMENT
EXHIBIT B

Gross sales for water amounted to $6,849,648.07. After deducting allowances for the sum of $21,615.33 and refunds in amount of $1,117.86, a total deduction of $22,733.19, the balance sheets figure, $6,826,914.88, is arrived at.

Operating Expenses show a net increase in amount of $9,042.16 as follows:

	Increase	Decrease
Source of supply		$11,500.82
Pumping		62,966.28
Purification	$ 9,598.20	
Transmission and distribution	40,027.63	
Commercial	10,641.30	
Administrative and general	2,263.96	
Uncollectible water bills	1,388.25	
Provision for depreciation		8,765.05
Municipal tax for comparison	28,354.97	
Net increase		9,042.16
	$92,274.31	$92,274.31

While Pumping Expenses show a decided decrease which is of a permanent nature the decrease in Source of Supply Expense over last year cannot be taken as a trend in that direction. Purification Expense is on the uptrend and Transmission and Distribution, due principally to repairs to meters, services and mains, show an increase over last year of $41,887.64. This is due in some degree to the street widening program still under way.

EXHIBITS C AND D

Show surplus earned for the past twelve months and composition of Surplus accumulated to date. Following is a statement of the disposition of Surplus arising from operations, together with additions and deductions not strictly confined to operations:

	To June 30, 1936	Year 1936-1937	To June 30, 1937
Surplus:			
Contributed—			
To General Fund	$4,697,126.00	$1,407,984.00	$6,105,110.00
To Hetch Hetchy Water Supply	508,912.00	552,102.05	1,061,014.05
To Hetch Hetchy Power	4,170.00		4,170.00
Advanced by General Fund	*84,298.00*		*84,298.00*
Appropriated—			
For Bond Redemption—Spring Valley Bonds	6,000,000.00	1,000,000.00	7,000,000.00
For Bond Redemption—PWA	515,094.33		515,094.33
For Additions & Betterments	4,046,916.79	395,000.00	4,441,916.79
For Purchase of Land	22,858.50		22,858.50
For Bond Interest—PWA	1,324.00		1,324.00
For Other Purposes	29,460.38		29,460.38
To Surplus	557,781.20	*119,674.90*	438,106.30
Net Income	$16,299,345.20	$3,235,411.15	$19,534,756.35

	To June 30, 1936	Year 1936-1937	To June 30, 1937
Add:			
Adjustment in sale of Packard . .	$ 2,095.00		$ 2,095.00
Balboa Park Reservoir Site sale.	12,715.89		12,715.89
Initial Surplus—Excess Earnings Spring Valley Company.	4,252,652.24		4,252,652.24
Grants Earned on Federal Projects	1,815,237.70	$429,760.39	2,244,998.09
Salvage Newark-San Lorenzo Pipe Line	323,723.34		323,723.34
Labor donated by U. S. Govt. Crystal Spgs. Pump Aqueduct	20,091.00		20,091.00
Miscellaneous Additions	9,410.80	35,222.00	44,632.80
	$6,435,925.97	$464,982.39	$6,900,908.36
Deduct:			
General Fund Contributions Net	4,612,828.00	1,407,984.00	6,020,812.00
Deficit County Line Water Works	19,189.15		19,189.15
Payment to Spring Valley for purpose of enabling City to take over property in advance	745,274.31		745,274.31
Lands contributed to City.	143,121.07		143,121.07
Miscellaneous Deductions from Surplus	56.93	13,857.65	13,914.58
Contributed to Hetch Hetchy Water Supply	508,912.00	552,102.05	1,061,014.05
Contributed to Hetch Hetchy Power Operation	4,170.00		4,170.00
	$6,033,551.46	$1,973,943.70	$8,007,495.16
Surplus June 30	$16,701,719.71	$1,726,449.84	$18,428,169.55

EXHIBIT A

BALANCE SHEET—JUNE 30, 1937

ASSETS

Fixed Capital:		
In Service	$46,747,226.68	
Under Construction	10,190,523.32	
	$56,937,750.00	
Less Reserve for Depreciation	516,887.94 ✓	$56,420,862.06
Cash:		
Treasurer's Balance—Schedule Annexed	$5,739,243.63	
Revolving Fund	30,000.00	
Other Cash	17,166.78	
		5,786,410.41
Accounts Receivable:		
Consumers	$525,143.38	
Federal Grants—Unaudited	224,872.00	
Other Accounts Receivable	24,804.75	
	$774,820.13	
Less Reserve for Losses	138,172.58	
		636,647.55
Interfund Accounts, Schedules Annexed:		
Public Service Enterprises	$78,835.97	
General City and County	16,802.99	
Intra-Fund Accounts (Contra)	644,543.89	
		740,182.85
Deferred Charges:		
Materials and Supplies on Hand	$304,824.88	
Revolving Fund Expenditures Unbilled	19,732.25	
Bond Expense Unamortized	13,391.98	
Miscellaneous Jobbing and Sales Account	5,296.00	
Suspense Debits	2,843.18	
Prepaid Rent, Insurance, Deferred Charges, etc.	251,945.00	
Property Abandoned	390,106.73	
Uncompleted Contracts and Commitments (Contra)	862,309.96	
		1,850,449.98
		$65,434,552.85

LIABILITIES

Bonded Debt:		
Spring Valley Water Bonds 1935-70	$34,000,000.00	
Water Distribution 1935-53	8,755,000.00	
Matured, not presented for payment: Spring Valley	....	
Matured, not presented for payment: Water Distribution	....	
		$42,755,000.00
Bond Interest Payable:		
Accrued, not due—Spring Valley	$765,000.00	
Accrued, not due—Water Distribution	29,183.33	
Matured, not presented for payment: Spring Valley	27,742.50	
Matured, not presented for payment: Water Distribution	101,500.00	
		923,425.83
Accounts Payable:		
Contract Payments Due	$188,726.59	
Contract Payments Withheld	64,429.74	
Warrants Outstanding	78,778.86	
Consumers' Deposits and Advances	46,944.63	
General Creditors	31,716.52	
Accounts and Contracts Payable (Contra)	862,309.96	
		1,272,906.30
Interfund Accounts—Schedules Annexed:		
Public Service Enterprises	$27,089.82	
General City and County	622,000.03	
Intra-Fund Accounts (Contra)	644,543.89	
		1,293,633.74
Deferred Credits:		
Compensation Insurance Reserve	$15,000.00	
Bond Premium Unamortized	741,357.70	
Suspense Credits	4,163.39	
Machine Shop Operations	896.34	
		761,417.43
SURPLUS		
Detailed Schedule Annexed		18,428,169.55
		$65,434,552.85

EXHIBIT B

INCOME ACCOUNT

For Twelve Months Ended June 30, 1937

	Twelve Months Ended June 30, 1937	1936
Sale of Water:		
San Francisco	$ 5,982,525.85	$ 5,756,974.61
Outside of San Francisco	363,134.04	312,799.85
Municipal Departments—Actual	59,992.60	58,879.34
Municipal Departments—Comparison*	421.262.39	392,907.42
	$6.826.914.88	$ 6,521,561.22
Operating Expense:		
Source of Water Supply	$ 153,614.10	$ 165,114.92
Pumping	161,488.62	224,454.90
Purification	58,791.70	49,193.50
Transmission and Distribution	316,638.62	276,610.99
Commercial Division	335,738.48	325,097.18
Administrative and General	456,972.47	454,708.51
Uncollectible Water Bills	31,841.96	30,453.71
Provision for Depreciation	74,385.00	83,150.05
Municipal Taxes—Comparison*	421.262.39	392.907.42
	$ 2,010,733.34	$ 2,001,691.18
Profit from Operations	$ 4,816,181.54	$ 4,519,870.04
Non-Operating Revenues:		
Rentals, including crop shares	$ 50,004.30	$ 42,679.80
Interest Earned	10,809.50	15,647.04
Miscellaneous	7,799.01	3,038.17
Walnut Orchard Sales	27,379.64	26.862.23
	$ 95,992.45	$ 88,227.24
Non-Operating Expense:		
Bond Interest	$ 1,643,637.42	$ 1,628,546.58
Agricultural Division	15,225.90	18,115.10
Miscellaneous	2,447.48	2,967.80
Walnut Orchard Expense	15.452.04	20,956.14
	$ 1,676,762.84	$ 1,670,585.62
Net Profit	$ 3,235,411.15	$ 2,937,511.66
Comparison Charges for Federal Income and State Corporation Franchise Taxes amount to	$ 504,046.77	$ 461,315.15

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*Water Service to Municipal Departments offset by Municipal Taxes.

EXHIBIT C

SURPLUS ACCOUNT

For Twelve Months Ended June 30, 1937

Surplus, June 30, 1936	$16,701,719.71	
Add:		
Net Profits for Twelve Months Ended June 30, 1937	3,235,411.15	
Grants—Earned on Federal Public Works Projects	429,760.39	
Miscellaneous Additions to Surplus	35.222.00	$20,402,113.25
Deduct:		
Contribution to General Fund (Twelve Months' Proportion 1936-1937)	$ 1,407,984.00	
Contribution to Hetch Hetchy Water Supply	552,102.05	
Miscellaneous Deductions from Surplus	13.857.65	1,973,943.70
Surplus, June 30, 1937		$18.428.169.55

EXHIBIT D

COMPOSITION OF SURPLUS

June 30, 1937

ADDITIONS

Initial Surplus March 3, 1930:		
Amortization Contribution (Spring Valley)	$ 4,152,652.24	
Valuation of Municipal Water Works	100,000.00	
Net Earnings March 3, 1930 to June 30, 1937	18,792,971.31	
Grants Earned on Federal Public Works Projects	2,245,000.00	
Salvage Value of Newark-San Lorenzo Pipe Line Transferred from Hetch Hetchy Supply	323,723.34	
Federal Government Expenditures for labor used in Building a Roof Over Crystal Springs Aqueduct	20,091.00	
Contribution from General Fund a/c P.W.A. Interest and Redemption	84,298.00	
Miscellaneous Additions to Surplus	36,763.36	$25,755,499.25

DEDUCTIONS

Contribution to General Fund	$ 6,105,110.00	
Contribution to Hetch Hetchy Water Supply	1,061,014.05	
Contribution to Hetch Hetchy Power Division	4,170.00	
Lands Contributed:		
To City and County of San Francisco for Streets and Boulevards	137,811.07	
To Joint Highway Commission for Widening of Junipero Serra Blvd. in San Mateo County	5,310.00	
Miscellaneous Deductions from Surplus	13,914.58	$ 7,327,329.70
Surplus, June 30, 1937		$18,428,169.55

EXHIBIT E

STATEMENT OF OPERATING EXPENSES

For the Fiscal Years Ended June 30, 1937 and 1936

	Fiscal year ended June 30, 1937	 1936
Source of Water Supply Expense:		
Superintendence 701 706	$ 22,314.72	$ 24,747.03
Operating Labor 702	37,285.65	87,243.13
Operating Supplies and Expense 703, 705	16,718.84	20,172.06
Repairs to Buildings and Fixtures 707	60,245.14	16,164.95
Repairs to Surface Facilities 708	16,864.79	15,813.89
Repairs to Ground Facilities	60.81	338.39
Repairs to Miscellaneous Equipment	124.15	635.47
	$153,614.10	$165,114.92

	Fiscal year ended June 30, 1937	1936
Pumping Expense:		
Labor, pumping	$ 38,507.09	$ 80,561.19
Labor, miscellaneous	4,418.17	3,794.04
Fuel for Steam	11,005.18	31,068.63
Power Purchased	90,239.40	90,323.89
Lubricants	57.93	329.64
Miscellaneous Supplies and Expense	2,598.62	2,463.53
Repairs to Primary Pumping Equipment	6,784.52	8,359.50
Repairs to Boilers and Equipment	148.57	283.33
Repairs to Miscellaneous Equipment	1,046.90	838.80
Other Repairs and Gardening	6,682.24	6,432.35
	$161,488.62	$224,454.90
Purification Expense:		
Superintendence	$ 3,693.91	$ 3,124.08
Labor	18,369.78	15,586.14
Supplies and Expense	31,410.68	25,493.31
Repairs to Plants and Structures	5,120.96	4,823.82
Repairs and Maintenance to Roads and Trails	196.37	166.15
	$ 58,791.70	$ 49,193.50
Transmission and Distribution Expense:		
Superintendence	$ 30,908.88	$ 31,322.11
Patrolling Storage Facilities	11,927.23	12,205.60
Meters and Fittings Department	83,791.48	70,191.32
Street Department	15,488.13	13,234.34
Consumers' Premises Expense	12,799.35	13,037.11
Misc. Supplies and Expense	7,373.60	7,582.74
Repairs to transmission mains and canals	25,037.72	21,016.87
Repairs to reservoirs, tanks, and stand pipes	2,737.93	1,300.17
Repairs to distribution mains and canals	56,239.04	40,619.62
Repairs to service	63,026.12	60,334.37
Repairs to distribution buildings	6,278.61	4,836.85
Repairs to misc. distribution equipments	1,030.53	1,079.76
	$316,638.62	$276,760.86
Commercial Expense:		
Collections	$110,112.43	$107,293.41
Reading meters	33,621.49	35,304.14
Bookkeeping department	99,556.36	94,811.44
General	31,652.69	30,142.54
Inspection and service	46,568.49	43,363.53
Shipping	14,227.02	14,182.12
	$335,738.48	$325,097.18

	Fiscal year ended June 30,	
	1937	1936
Administrative and General Expenses:		
Salaries of general officers	$ 18,399.99	$ 18,400.04
Salaries of general office clerks	36,512.70	37,782.14
Miscellaneous supplies and expense	6,082.57	5,827.28
Injuries and damages	3,061.80	532.58
Relief department expense	38,843.82	42,620.31
Mason Street building expense	22,392.70	21,410.13
Telephone service	15,469.80	15,106.10
Guest cottages and rest room	2,010.14	1,286.44
General engineering	34,661.99	29,072.55
Hydrography	2,669.32	4,596.39
Miscellaneous	5,064.34	3,564.90
Compensation insurance	4,485.16	4,315.70
Other insurance	5,659.01	6,456.16
Repairs, Mason Street building	6,143.47	2,209.20
Repairs, general structures	3,857.97	430.04
Repairs, telephone system	5,355.97	5,733.74
Professional services, advisory and consulting expense	5,975.00	6,439.25
Public Utilities Commission expenses	47,269.51	45,468.10
Property taxes	193,057.21	199,648.01
	$456,972.47	$450,899.06

SCHEDULE No. 1

SUPPORTING DATA FOR BALANCE SHEET ACCOUNTS

Fixed Capital in Service:	
Property Purchased March 3, 1930	$42,285,518.78
Municipal Water Works	100,000.00
Present Value of Property Purchased March 3, 1930	$42,385,518.78
Additions and Betterments Since March 3, 1930:	
Intangible Capital	$ 235,018.49
Landed Capital	60,642.90
Buildings, Structures and Grounds	77,387.35
Source of Water Supply Capital	1,184,448.58
Pumping Station Equipment	68,006.64
Purification System	133,090.90
Transmission and Distribution System	2,404,217.23
Mains Laid Under Refunding Rules	4,735.35
Services Installed Under Refunding Rules	786.90
General Equipment	100,751.78
Automobiles	90,915.80
Undistributed Construction Expenditure	1,705.98
	$ 4,361,707.90
TOTAL FIXED CAPITAL IN SERVICE	$46,747,226.68
Fixed Capital Under Construction:	
Palo Alto Pipe Line	$ 5,821.26
Extension Reserve Fund	45,190.09
Newark-San Lorenzo Pipe Line—Salvage	68,152.23
*P.W.A. Project 1510	10,071,359.74
Total Fixed Capital Under Construction	$10,190,523.32
Total Capital Assets	$56,937,750.00
Less Reserve for Depreciation	516,887.94
NET CAPITAL ASSETS	$56,420,862.06

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*See Detail Schedules.

SCHEDULE No. 2
FIXED CAPITAL UNDER CONSTRUCTION
P.W.A. PROJECTS—June 30, 1937

Docket Number	Account Number	DESCRIPTION	Total	Contracts	Materials	Inspection and Supervision	Force Acct. Main Connections	Force Acct. Transfer Services	Indirect Costs
1500	100	General Expenditures—Interest During Construction	$ 485,555.76						$485,555.76
1501	105	General Expenditures—Undistributed Construction Costs	66,725.56		$ 1,165.28	$ 141.12			65,419.16
1502	115	General Expenditures—Equipment Purchased—Undistributed	9,804.60						9,804.60
1504	120	General Expenditures—Suspense Debits	658.23						658.23
			$ 562,744.15		$ 1,165.28	$ 141.12			$561,437.75
1510-1	140	Bay Crossing Pipe Line No. 2—Undistributed Construction Costs	$ 92,467.93		$ 4,556.28	$ 12,737.46			$ 75,174.19
1510-1-A1	145	Bay Crossing Pipe Line No. 2—66″ Steel Pipe	1,784,377.65	$1,703,974.46	37,281.67	42,722.66			398.86
1510-1-A2	150	Bay Crossing Pipe Line No. 2—62″ Reinforced Concrete Pipe	669,738.79	640,461.17	17,696.30	11,572.99			8.33
1510-1-1B	155	Bay Crossing Pipe Line No. 2—Trestles for Pipe	191,124.46	180,813.18		10,286.66			24.62
1510-1-C	160	Bay Crossing Pipe Line No. 2—Submarine Pipes and Caissons	800,821.11	736,913.30	27,100.87	35,086.91			1,720.03
1510-1-D	165	Bay Crossing Pipe Line No. 2—Pump Station at Irvington	3,356.01						3,356.01
1510-1-E	170	Bay Crossing Pipe Line No. 2—Housing Over Pipe on Trestle	39,900.79	34,824.97		3,582.88			1,492.94
1510-1-F	175	Bay Crossing Pipe Line No. 2—Railroad Culvert Crossings	34,743.59	23,570.48					11,173.11
1510-6-AB		Bay Crossing Pipe Line No. 2—Material Furnished Contractors							
			$ 3,616,530.33	$3,320,557.56	$ 86,635.12	$115,989.56			$ 93,348.09
1510-5	550	Crystal Springs-University Mound Pipe Line—Undistributed Constr. Costs	$ 154,794.58		$ 165.01	$ 1,818.31			$152,811.26
1510-5-A	555	Crystal Springs-University Mound Pipe Line—Crystal Spgs. Pipe Line Tun.	223,250.54	210,831.44	180.15	11,845.26			393.69
1510-5-B	560	Crystal Springs-University Mound Pipe Line—Millbrae to University Md.	1,349,830.46	1,274,315.31	7,497.00	54,424.76			13,593.39
1510-5-C	565	Crystal Springs-University Mound Pipe Line—Crystal Springs to Millbrae	$ 404,452.81	$ 352,084.37	$ 19,375.61	$ 19,438.84			$ 13,553.99
1510-5-D	570	Crystal Springs-University Mound Pipe Line—Crystal Spgs. Tunnel & Out.	64,704.92	61,357.20		3,088.57			259.15
1510-5-E	575	Crystal Springs-University Mound Pipe Line—Railroad Culvert Crossings.	6,093.49	6,093.49					
1510-6-D		Crystal Springs-University Mound Pipe Line—Material furnished Contrs..							
			$ 2,203,126.80	$1,904,681.81	$ 27,217.77	$ 90,615.74			$180,611.48
1510-4	500	University Mound Reservoir Addition—Undistributed Section Costs	$ 114,355.81			$ 352.46			$114,003.35
1510-4-A	505	University Mound Reservoir Addition—Excavation and Embankment	106,840.85	99,714.23	57.65	6,820.00			248.97
1510-4-C	515	University Mound Reservoir Addition—Concrete Construction	282,310.91	256,588.03	7,280.04	13,480.51			4,962.33
1510-6-E		University Mound Reservoir Addition—Gate Valves							
			$ 503,507.57	$ 356,302.26	$ 7,337.69	$ 20,652.97			$119,214.65
1510-6H to N		Material Purchase Contracts (Balance)							
1510-6		Material Purchase Unclassified							
1510-6-A1		Project General—Unallocated							
		Total This Page	$ 6,885,908.85	$5,581,541.63	$122,355.86	$227,399.39			$954,611.97

SCHEDULE No. 2 (Continued)

FIXED CAPITAL UNDER CONSTRUCTION

P.W.A. PROJECTS—June 30, 1937

Docket Number	Account Number	DESCRIPTION	Total	Contracts	Materials	Inspection and Supervision	Force Acct. Main Connections	Force Acct. Transfer Services	Indirect Costs
1510-2	200	Sunset Reservoir and Pipes—Undistributed Section Costs	$ 206,883.15			$ 8.27			$206,874.88
1510-2-A	205	Sunset Reservoir and Pipes—54″ Steel Pipe Supply Line	160,761.08	$ 154,185.40	$ 2,342.09	2,804.76	$ 1,390.86		37.97
1510-2-B	210	Sunset Reservoir and Pipes—Excavation and Embankments	217,769.63	195,713.51		20,527.15			1,528.97
1510-2-C	215	Sunset Reservoir and Pipes—Concrete Construction	9,980.27			400.61			9,579.66
1510-2-D	220	Sunset Reservoir and Pipes—60″ Pipe Discharge Line	295.62						295.62
1510-6-E		Sunset Reservoir and Pipes—Gate Valves							
1510-6-F		Sunset Reservoir andPipes—Gate Valves							
			$ 595,689.75	$ 349,898.91	$ 2,342.09	$ 23,740.79	$ 1,390.86		$218,317.10
1510-3	250	Extension to City Pipe System—Undistributed Section Costs	$ 29,956.72		$ 1,080.75	$ 304.71			$ 28,571.26
1510-3-A1	255	Extension to City Pipe System—University Mound 44″ & 36″ Steel Pipe	61,061.27	$ 54,801.55	1,725.92	1,314.51	$ 3,143.29		76.00
1510-3-A2-A	260	Extension to City Pipe System—University Mound 36″ & 30″ Steel Pipe	95,622.73	88,175.02	3,101.60	2,287.34	1,992.30		66.47
1510-3-A2-B	265	Extension to City Pipe System—University Mound 36″ & 30″ Steel Pipe	155,262.84	142,498.86	4,493.49	2,488.13	5,651.50		130.86
1510-3-B1	270	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	78,244.22	28,524.91	26,942.81	659.50	6,229.82	15,384.00	503.18
1510-3-B2	275	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	65,411.28	27,909.02	25,061.50	582.46	5,109.99	6,704.57	43.74
1510-3-B3	280	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	65,503.90	29,337.18	18,523.97	1,072.55	6,021.48	10,436.35	112.37
1510-3-B4	285	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	74,242.10	33,544.11	26,956.05	625.95	5,464.43	7,610.22	41.34
1510-3-B5	290	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	52,330.15	23,130.09	18,827.45	606.76	3,247.69	6,518.16	
1510-3-B6	295	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	62,757.70	25,160.48	19,062.88	645.31	4,239.99	13,641.72	7.32
1510-3-B7	300	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	76,045.30	30,348.29	25,602.57	898.36	4,630.96	14,400.88	164.24
1510-3-B8	305	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	63,792.58	25,817.14	20,668.63	521.29	3,459.97	13,083.13	242.42
1510-3-B9	310	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	49,817.50	19,505.69	18,108.05	1,032.21	3,993.06	6,736.04	442.45
1510-3-B10	315	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	48,714.96	21,759.51	13,382.19	1,736.58	4,418.97	7,118.80	298.91
1510-3-B11	320	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	55,442.41	19,444.53	18,283.20	1,321.63	3,908.20	12,205.74	279.11
1510-3-B12	325	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	68,258.76	30,839.61	23,269.47	1,717.24	4,125.24	8,033.70	273.50
1510-3-B13	330	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	50,826.72	18,007.88	17,649.81	1,136.24	4,088.89	9,830.81	113.09
1510-3-B14	335	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	44,996.66	16,882.31	16,425.30	791.59	2,974.54	7,814.85	108.07
1510-3-B15	340	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	63,258.83	25,637.69	20,533.60	915.06	5,395.70	10,672.05	104.73
1510-3-B16	345	Extension to City Pipe System—Extension Grid System 6″ & 8″ Pipe	50,686.96	19,496.80	18,814.42	750.84	3,796.00	7,705.46	123.44
1510-3-C1	350	Extension to City Pipe System—Secondary Mains C. I. Pipe 16″ & 12″	124,098.02	43,448.60	74,936.18	1,035.15	4,611.49		66.60
1510-3-C2	355	Extension to City Pipe System—Secondary Mains C. I. Pipe 16″ & 12″	131,377.71	46,976.32	79,608.18	1,223.10	3,379.12		190.99
1510-3-C3	360	Extension to City Pipe System—Secondary Mains C. I. Pipe 16″ & 12″	97,580.68	37,011.13	51,679.15	1,729.24	6,859.95		301.21
1510-3-C3A	360A	Extension to City Pipe System—Secondary Mains C. I. Pipe 16″ & 12″	2,248.69	891.20	1,101.21	17.25	121.40		117.63
1510-3-C4	365	Extension to City Pipe System—Secondary Mains C. I. Pipe 16″ & 12″	101,478.12	51,164.34	41,891.16	2,002.84	6,151.51		268.27
1510-3-C5	370	Extension to City Pipe System—Secondary Mains C. I. Pipe 16″ & 12″	142,302.24	135,005.08	1,248.33	3,090.26	2,697.46		261.11
1510-3-C6	375	Extension to City Pipe System—Secondary Mains 20″ Steel Pipe	138,259.93	128,243.55	3,235.56	4,048.05	2,506.06		226.71
1510-3-D	380	Extension to City Pipe System—College Hill 30″ & 20″ Steel Pipe	140,301.67	120,849.91	10,042.51	4,213.07	3,991.20		1,204.98
1510-3-E	385	Extension to City Pipe System—Crosstown 44″ & 36″ Steel Pipe	213,744.30	196,620.37	7,092.68	6,008.74	3,154.37		868.14
1510-3-FA	390A	Extension to City Pipe System—Central Pumps Reservoir	3,295.08	3,130.39	24.88	125.65			14.16
1510-3-F	390	Extension to City Pipe System—Central Pumps Reservoir	182,841.11	165,210.06	4,028.26	9,427.29	542.00		3,633.50
1510-3-CA		Extension to City Pipe System—Pipe Connnection 12″ Main-Harrison St.							
1510-3-FA		Extension to City Pipe System—Pipe Connection 20″ Main-Sloat Blvd.							
1510-3		Extension to City Pipe System—Paving Contract Allocation							
			$ 2,589,761.14	$1,609,371.62	$613,401.76	$ 54,328.90	$115,906.58	$157,896.48	$ 38,855.80
		Total This Page	3,185,450.89	1,959,270.53	615,743.85	78,069.69	117,297.44	157,896.48	257,172.90
		Total Preceding Page	6,885,908.85	5,581,541.63	122,355.86	227,399.39			954,611.97
		Grand Total	$10,071,359.74	$7,540,812.16	$738,099.71	$305,469.08	$117,297.44	$157,896.48	$1,211,784.87

SCHEDULE No. 3
CASH AND OUTSTANDING WARRANTS
JUNE 30, 1937

	Treasurer's Balance	Outstanding Warrants	Transfer in Transit
Water Revenue Fund	$ 732,196.13	$ 62,251.22	
Special Deposit Trust Fund	52,653.12	5,542.97	
Land Purchase Fund	35,193.59		
Extension Reserve Fund	182,869.56	300.00	
Depreciation Fund	376,095.32	1,311.44	$ 4,000.00
Bond Redemption (1928)	1,000,000.00		
Bond Redemption (1933)	....		
Bond Interest (1928)	792,742.50		
Bond Interest (1933)	101,500.00		
Bond Fund (1933)	2,205,365.88	5,373.23	
Palo Alto Pipe Line Fund	260,627.53		
	$5,739.243.63	$ 74,778.86	$ 4,000.00

SCHEDULE No. 5
SCHEDULE OF BONDED INDEBTEDNESS
JUNE 30, 1937

Spring Valley 4½% Bonds

Maturity	Amount
$1,000,000.00	July 1, 1937
1,000,000.00	July 1, 1938
1,000,000.00	July 1, 1939
1,000,000.00	July 1, 1940
1,000,000.00	July 1, 1941
1,000,000.00	July 1, 1942
1,000,000.00	July 1, 1943
1,000,000.00	July 1, 1944
1,000,000.00	July 1, 1945
1,000,000.00	July 1, 1946
1,000,000.00	July 1, 1947
1,000,000.00	July 1, 1948
1,000,000.00	July 1, 1949
1,000,000.00	July 1, 1950
1,000,000.00	July 1, 1951
1,000,000.00	July 1, 1952
1,000,000.00	July 1, 1953
1,000,000.00	July 1, 1954
1,000,000.00	July 1, 1955
1,000,000.00	July 1, 1956
1,000,000.00	July 1, 1957
1,000,000.00	July 1, 1958
1,000,000.00	July 1, 1959
1,000,000.00	July 1, 1960
1,000,000.00	July 1, 1961
1,000,000.00	July 1, 1962
1,000,000.00	July 1, 1963
1,000,000.00	July 1, 1964
1,000,000.00	July 1, 1965
1,000,000.00	July 1, 1966
1,000,000.00	July 1, 1967
1,000,000.00	July 1, 1968
1,000,000.00	July 1, 1969
1,000,000.00	July 1, 1970
$34,000,000.00	

1933 Water Distribution 4% Bonds

Maturity	Amount
$ 521,000.00	Dec. 1, 1937
515,000.00	Dec. 1, 1938
515,000.00	Dec. 1, 1939
515,000.00	Dec. 1, 1940
515,000.00	Dec. 1, 1941
515,000.00	Dec. 1, 1942
515,000.00	Dec. 1, 1943
515,000.00	Dec. 1, 1944
515,000.00	Dec. 1, 1945
515,000.00	Dec. 1, 1946
515,000.00	Dec. 1, 1947
515,000.00	Dec. 1, 1948
515,000.00	Dec. 1, 1949
515,000.00	Dec. 1, 1950
515,000.00	Dec. 1, 1951
515,000.00	Dec. 1, 1952
509,000.00	Dec. 1, 1953
$8,755,000.00	

Total Bonds Outstanding June 30, 1937

Spring Valley Bonds	$34,000,000.00
1933 Water Dist. Bonds	8,755,000.00
Total	$42,755,000.00

SCHEDULE No. 4

SUMMARY OF INTERFUND ACCOUNTS

JUNE 30, 1937

ACCOUNTS RECEIVABLE

Public Service Enterprises:		
Hetch Hetchy Power Operative	$ 109.92	
Hetch Hetchy Water Supply	5,578.12	
Municipal Railway	363.09	
San Francisco Airport	56.99	
Hetch Hetchy Water—1933 Dam	95.17	
Public Utilities Improvement Fund	301.70	
Public Utilities Improvement Fund Owes Depreciation Fund	72,191.15	
Hetch Hetchy 1932 Bond Fund	139.83	
		$ 78,835.97
General City and County:		
Public Utilities Commission—Bureau of Engineering	$ 10,047.38	
General Fund—Department of Public Works	704.15	
General Fund—Street and Public Building Lighting Department	131.88	
General Fund—Bureau of Engineering	2,861.77	
W.P.A. 1936-1937 Projects Fund	1,956.53	
General Fund—Fire Department	1,076.28	
General Fund—Park Department		
Public Utilities Commission—General Office	25.00	
		$ 16,802.99
Intra-Fund Accounts:		
Due Extension Fund from Palo Alto Pipe Line Fund	$261,326.32	
Due Revenue Fund from Bond Fund	7,479.37	
Due Revenue Fund from Extension Fund	16,275.39	
Due Revenue Fund from Bond Fund—Machine Shop Mtls.	3,617.83	
Due Revenue Fund from Depreciation Fund	210.63	
Due Revenue Fund from Trust Fund	213.02	
Due Revenue Fund from Palo Alto Pipe Line Fund	3,362.58	
Machine Shop Suspense a/c Bond Fund	28,418.46	
Due Extension Fund from Bond Fund	42,898.49	
Work in Progress—Unbilled—P.W.A. Docket 1510	8,193.31	
Work in Progress—Unbilled—P.W.A. Docket 1612	1,759.89	
Due Bond Fund from Revenue Fund	71,953.54	
Due Bond Fund from Revenue Fund—Contra	27,981.98	
Due Bond Fund from Revenue Fund—Interest	167,184.00	
Due Bond Fund from Revenue Fund—Machine Shop Mtls.	3,617.83	
Due Extension Fund from Bond Fund	51.25	
		$644,543.89

ACCOUNTS PAYABLE

Public Service Enterprises:		
Hetch Hetchy Water Supply	$ 13,464.10	
Hetch Hetchy Water Supply—(Bond Fund)	10,489.94	
Public Utilities Commission—Bureau of Engineering (Bond Fund)	2,702.82	
Public Utilities Commission—Bureau of Engineering	432.96	
		$ 27,089.82
General City and County:		
General Fund (from Bond Fund) Controller's Office	$ 875.46	
Retirement System	8,097.52	
General Fund—Street and Public Building Lighting Department	10,019.58	
General Fund—Contributions	500,000.00	
Real Estate Department (Bond Fund)	289.91	
Department of Public Works—Bureau of Engineering (Bond Fund)	478.55	
Department of Public Works	14.89	
Recreation Department (Bond Fund)	541.15	
Cash Revenue Fund—Bond Fund	101,682.97	
		$622,000.03
Intra-Fund Accounts:		
See Contra Balance		$644,543.89

SCHEDULE No. 6

OPERATING COSTS

RESERVOIRS AND SOURCES

	1933-34	1934-35	1935-36	1936-37
Inside of San Francisco				
Lake Merced	$ 4,395.92	$ 4,335.91	$ 4,822.96	$ 5,608.04
Sunset Wells	197.30	18.18	194.29	60.81
Sunset Pump Supply Line	1,514.92	1,346.48	150.47	2,700.29
Central Pump Supply Line	....	....	329.20	19.55
City Pump Supply Line	17.10	6.89	118.29	185.99
	$ 6,125.24	$ 5,707.46	$ 5,615.21	$ 8,574.68
Outside of San Francisco				
Surface Source				
San Andres Reservoir	$ 15,709.36	$10,455.47	$ 8,461.74	$ 9,751.01
Crystal Springs Reservoir	22,447.74	31,122.91	27,127.23	28,790.17
Pilarcitos Reservoir	12,863.24	11,836.96	24,332.69	14,433.70
Calaveras Reservoir	5,997.30	8,531.28	12,705.72	15,185.69
Newark-San Lorenzo Pipe Line Purchased for Resale	48,750,000	....	....	....
Coast Range Tunnels	....	32,106.78	1,169.53	....
Niles Reservoir	....	....	....	1.70
	$105,767.64	$ 94,053.40	$ 73,796.91	$ 68,162.27
Ground Source				
Sunol Filter Beds	$ 10,242.55	$ 8,008.34	$ 9,610.52	$ 8,646.51
Pleasanton Wells	230.01	75.65	240.19	27,96
	$10,472.56	$ 8,083.99	$ 9,850.71	$ 8,674.47
Supply Lines—				
Bay Division Pipe Line	$ 11,852.55	$ 6,394.78	$ 8,278.78	$11,694.77
Stone Dam Aqueduct	17,224.46	6,923.03	9,634.27	5,692.41
Pilarcitos Aqueduct	192.80	925.58	673.86	946.00
San Andres Aqueduct	....	....	....	57.16
Crystal Springs Pump Supply Line	393.54	52.42	539.70	40.91
Belmont Pump Supply Line	.57	3.02	16.29	1.84
Millbrae Pump Supply Line	60.01	....	....	....
Niles-Irvington Pipe Line	731.27	696.02	1,022.00	457.21
Niles Supply Lines	74.66	12.01	28.71	....
Pleasanton Pump Supply	189.62	859.11	33.90	5.03
Sunol Supply Line	26.21	181.55	22.09	....
Upper Alameda Tunnel	2,235.28	731.72	770.81	66.15
Upper Alameda Creek Diversion Dam	731.86	1,084.02	1,003.52	1,213.16
Calaveras Pipe Line	10.22	695.04	703.52	89.65
Niles Transmission Line	2.79	31.74	....	....
Newark-San Lorenzo Pipe Line	....	....	....	52.32
	$ 33,725.84	$18,590.04	$22,727.45	$20,316.61
Alameda System	13,344.03	11,535.68	12,278.59	10,820.39
Peninsula System	31,924.82	32,871.33	40,846.05	37,065.68
	$ 45,268.85	$ 44,407.01	$ 53,124.64	$ 47,886.07
Total Source of Supply	$201,360.13	$170,841.90	$165,114.92	$153,614.10

SCHEDULE No. 7

OPERATING EXPENSES

TRANSMISSION AND DISTRIBUTION

Inside of San Francisco—	1933-34	1934-35	1935-36	1936-37
San Andres Transmission Line No. 1	$ 675.30	$ 170.84	$ 1,688.53	$ 946.16
San Andres Transmission Line No. 2	298.25	*124.72*	56.15	....
San Andres Transmission Line—Merced Branch	873.04	1,151.94	555.99	1,249.31
Crystal Springs Transmission Line	6.40	745.62	....	19.38
Lake Honda Transmission Line	194.01	42.06	344.02	154.33
Sunset Reservoir Transmission Line	....	....	171.74	....
City Reservoirs	10,722.56	14,235.46	11,554.93	12,923.78
Meter Expense	44,457.18	44,031.65	65,775.43	77,231.63
Street Department Expense	13,047.04	13,529.93	13,234.34	15,488.13
Main Repairs	29,085.74	37,665.99	40,617,19	56,239.04
Service Connection Repairs	70,355.67	50,203.95	60,334.37	63,003.71
Repairs to Buildings and Equipment	1,530.40	1,769.00	2,008.09	3,159.75
Miscellaneous Supplies and Expense	7,060.04	5,496.13	6,003.23	6,043.09
Consumers Premises Expense*	....	....	....	....
Superintendence	29,578.25	26,089.43	31,322.11	30,908.88
Total Inside San Francisco	$207,883.88	$195,007.28	$233,666.12	$267,367.19

Outside of San Francisco—	1933-34	1934-35	1935-36	1936-37
Alameda Supply Line	$ 1,461.47	$ 4,380.28	$ 3,297.21	$ 923.44
Alameda Transmission Line	1,411.31	5,403.57	4,470.59	5,939.04
Stone Dam Aqueduct	....	....	....	5.47
Crystal Springs Pump Aqueduct	7,118.75	7,119.61	6,265.08	6,300.69
Crystal Springs Transmission Line	3,624.07	1,984.45	4,133.28	8,177.84
San Andres Line No. 1	1,485.82	1,475.05	1,423.17	1,769.84
San Andres Line No. 2	2,547.94	3,452.59	2,293.32	3,142.75
San Andres Line—Merced Branch	1,787.41	1,905.44	863.30	1,082.11
Niles Reservoir	2,090.16	3,180.60	2,872.53	2,561.37
Pleasanton Transmission Line	....	9.09	23.26	9.68
Newark-San Lorenzo Pipe Line	671.51	....	....	....
Meter Expense	4,849.71	3,617.66	4,415.89	8,331.97
Total outside San Francisco	$ 27,048.15	$ 32,528.34	$ 30,057.63	$ 38,244.20
Transferred from Miscellaneous Income	....	*2,915.90*	....	....
Total Transmission and Distribution Expense	$234,932.03	$224,619.72	$263,723.75	$305,611.39
*Consumers Premises Transferred to Commercial Expense	$ 18,105.99	$ 17,370.49	$ 13,037.11	$ 11,027.23

Italic figures denote loss and deficiency.

SCHEDULE No. 8

OPERATING EXPENSES

PUMP STATION

Inside of San Francisco—

Steam Plants	1933-34	1934-35	1935-36	1936-37
Central	$ 36,826.70	$ 40,531.46	$ 40,859.57	$ 42,029.94
City	21,344.17	1,804.27	562.73	2,359.99
Black Point	345.12	338.94	264.38	210.22
Clarendon Heights	148.86	126.75	219.47	447.98
Ocean View	5.40	3.52	9.66	....
	$ 58,670.25	$ 42,804.94	$ 41,915.81	$ 45,048.13
Electric Pumps				
Precita Valley	$ *39.12*	$ 67.14	$ 37.61	$ 424.81
Forest Hill	3,004.14	2,496.46	4,369.92	4,617.88
Potrero Heights	79.56	158.13	148.87	204.92
Newcomb Avenue	485.63	496.67	526.59	561.55
Hillside	344.04	425.27	353.40	395.54
Fairview	362.66	394.91	544.16	164.94
Lincoln Park	89.73	131.71	318.47	388.81
Crocker Amazon	103.43	....	16.07	....
Daly Hill	403.70	9.68	1.20	....
Twin Peaks	170.11	207.04	329.00	310.23
Lake Honda Booster	1,739.38	3,746.35	2,712.83	2,318.91
University Pump	570.09	632.92	569.19	26.74
Leland Avenue	13.17	7.75	297.27	.17
Sunset Booster	35,181.11	33,652.67	8,682.50	2,204.91
Sunset Wells	....	....	....	3.03
Sunset Source	17,911.65	19,884.51	9,688.31	1,840.33
Olmstead	217.08	445.40	384.57	379.84
Bernal Heights	463.11	219.69	218.55	124.52
St. Germain	....	....	44.40	280.92
	$ 61,099.47	$ 62,976.30	$ 29,242.91	$ 14,248.05
Total Inside San Francisco	$119,769.72	$105,781.24	$ 71,158.72	$ 59,296.18
Outside of San Francisco—				
Belmont Pump	$ 57,339.70	$ 58.860.49	$ 60,828.30	$ 3,300.23
Millbrae Pump	3,186.76	422.14	701.21	352.33
Crystal Springs Pump	59,925.09	80,910.99	71,375.70	82,661.36
Bay Division Pump	34,195.47	21,423.10	6,897.50	6,188.15
Pleasanton Pumps	13,735.75	22,381.43	9,008.02	5,753.78
Pleasanton Township Water District	4,549.95	4,336.76	4,005.49	3,568.62
San Lorenzo Pumps	288.83	172.67	479.96	236.25
Calaveras Aerator	....	....	....	131.72
	$173,221.55	$188.507.58	$153,296.18	$102,192.44
Transfer from Miscellaneous Income by Auditors	....	*3,503.86*	....	....
Total Pumping Expenses	$292,991.27	$290,784.96	$224,454.90	$161,488.62

Italic figures denote loss and deficiency.

SCHEDULE No. 9

OPERATING EXPENSES

PURIFICATION EXPENSE

	1933-34	1934-35	1935-36	1936-37
Inside of San Francisco—				
Lake Merced	....	....	....	$ 104.38
Lombard Street	$ 313.33	$ 57.51	....	....
Clarendon Heights Tank	18.61	145.58	....	....
Sunset	489.60	280.54	$ 166.49	35.51
College Hill	67.11	647.15	677.73	1,017.83
University Mound	511.12	769.86	768.84	1,199.40
Lake Honda	6,507.47	6,888.24	6,494.90	6,730.35
Division General	276.84	430.07	1,998.76	8,742.23
	$ 8,184.08	$ 9,218.95	$ 10,106.72	$ 17,829.70
Outside of San Francisco—				
Peninsula Laboratory	....	....	....	$ 3,653.00
Calaveras Reservoir	$ 2,599.81	$ 2,837.98	$ 3,002.69	856.01
Calaveras Aerator Plan	....	574.95	2,785.45	1,916.96
Calaveras Chlorinator	....	....	....	5,741.51
Calaveras P/L Chlorine Plant (Temp.)	....	118.69	....	....
Sunol	5,502.13	4,390.04	3,507.00	1,514.69
Irvington Portal	67.08	3,721.73	11,233.29	6,828.28
Coast Range Division	....	357.85	300.73	....
Hetch Hetchy Junction Purification	....	....	....	3,972.23
Foothill Division	....	140.12	....	....
Portable Chlorinator Unit	....	....	....	4.95
Bay Division	75.83	49.85	6.00	....
Alameda Transmission Line	12.42	151.65	25.00	....
Belmont Purification System	339.09	803.75	1,197.04	314.97
Crystal Springs	5,763.60	4,663.76	6,460.05	5,245.82
Crystal Springs Pipe Line	....	5.98	.75	....
Millbrae	61.90	23.88	51.31	....
Pilarcitos Reservoir	20.29	27.94	83.19	176.29
San Andres Reservoir	2,542.91	1,925.83	2,685.11	1,724.81
San Andres System No. 1	1,102.03	1,636.04	1,633.96	1,776.60
San Andres System No. 2	2,092.80	2,206.11	2,168.10	2,691.35
San Andres Transmission Line No. 1	....	....	20.62	....
San Mateo Screen Tank	386.45	36.75	18.11	271.16
Division General—Peninsula	274.48	2,458.92	3,116.80	3,757.37
Division General—Alameda	....	....	791.58	516.00
	$ 20,840.82	$ 26,131.82	$ 39,086.78	$ 40,962.00
Total Purification Expense	$ 29,024.90	$ 35,350.77	$ 49,193.50	$ 58,791.70

SCHEDULE No. 10

OPERATING EXPENSES

	1933-34	1934-35	1935-36	1936-37
Commercial Expense:				
Collections	$102,923.86	$102,551.72	$107,293.41	$110,112.43
Reading Meters	30,621.99	32,909.68	35,304.14	33,621.49
Bookkeeping Department	99,928.37	92,647.66	94,811.44	99,556.36
General and Miscellaneous	27,038.15	28,762.21	30,142.54	31,652.69
Inspection and Service	36,897.82	41,771.83	43,363.53	46,568.49
Shipping	13,243.91	13,664.34	14,182.12	14,227.02
Consumers Premises*	18,105.99	17,370.49	13,037.11	11,027.23
	$328,760.09	$329,677.93	$338,134.29	$346,765.71

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*Transferred from Transmission and Distribution Expenses.

Administrative and General Expenses:

General and Miscellaneous

Salary of General Officers	$ 15,088.02	$ 16,468.03	$ 18,400.04	$ 18,399.99
Salary of General Office Clerks	29,146.75	32,148.76	37,782.14	36,512.70
Miscellaneous Supplies and Expenses	5,457.60	5,982.46	5,827.28	10,426.91
Public Utilities Commission Expense	25,396.00	37,977.00	45,468.10	47,269.51
General Engineering	13,511.37	24,248.41	29,072.55	34,661.99
Hydrography	2,926.31	2,916.84	4,596.39	2,669.32
Telephone Operation	12,900.97	13,350.77	15,106.10	15,469.80
Repairs to Telephone System	5,111.01	4,967.99	5,733.74	5,355.97
Mason Street Building Operation	20,159.48	20,371.00	21,410.13	22,392.70
Rest Room and Guest Cottages	1,404.23	1,309.23	1,286.44	2,010.14

Purchasing and Miscellaneous	1,534.50	....	....	....
Mason Street Building Repairs	2,259.57	266.52	2,209.20	6,143.47
Advisory and Consulting	5,324.15	1,871.02	6,439.25	5,975.00
Repairs to General Structures	....	....	430.04	3,857.97
	$140,219.96	$161,878.03	$193,761.40	$211,145.47
Other Operating Expenses				
Insurance Compensation	$ 13,432.32	$ 12,839.46	$ 4,315.70	$ 4,485.16
Insurance, Other	5,943.74	6,505.14	6,456.16	5,659.01
Injuries and Damages	2,356.02	5,617.11	532.58	3,061.80
Pensions	43,904.72	42,725.24	42,620.31	38,843.82
Property Taxes	200,250.28	201,278.31	199,648.01	193,057.21
Miscellaneous	1,580.60	1,130.80	3,564.90	720.00
	$267,467.68	$270,096.06	$257,137.66	$245,827.00
	$407,687.64	$431,974.09	$450,899.06	$456,972.47

Italic figures denote loss and deficiency.

SCHEDULE No. 11

Operating Expenses 1936-1937

City Distribution Division

Pumping Station Account

	Labor	Transportation	Material	Fuel or Power	Machine Shop	Miscellaneous	Total
Steam Pumps:							
Central	$28,499.03	$ 37.50	$1,653.72	$10,899.85	$ 733.72	$*163.37 42.75	$42,029.94
City	2,358.44	.90	.....	.....	.....	* .65	2,359.99
Black Point	176.59	1.80	14.62	.....	14.36	* 2.85	210.22
Clarendon Heights	59.84	.60	2.28	.....	.....	*385.26	447.98
	$31,093.90	$ 40.80	$1,670.62	$10,899.85	$ 748.08	$ 594.88	$45,048.13
Electric Pumps:							
Precita Valley	$ 195.96	$ 7.05	$ 4.16	$ 201.63	$	$ 16.01	$ 424.81
Forest Hill	800.71	93.53	148.11	2,881.20	479.13	*215.20	4,617.88
Potrero Heights	107.72	13.50	10.56	69.36	3.78	.....	204.92
Newcomb Avenue	89.81	9.95	6.21	449.92	5.66	.....	561.55
Hillside	101.74	10.20	.....	276.04	7.56	.....	395.54
Fairview	55.84	9.52	.58	37.20	61.80	.....	164.94
Lincoln Park	129.79	18.67	92.55	21.52	93.39	* 32.89	388.81
Twin Peaks	134.90	17.10	18.17	102.04	36.52	* 1.50	310.23
Lake Honda Booster	261.10	4.50	6.54	2,002.74	18.18	* 3.75 22.10	2,318.91
University Mound	25.96	.60	.18	.....	.....	.....	26.74
Leland Avenue	.....	.....	.17	.....	.....	.....	.17
Sunset Booster	337.29	.....	41.61	1,821.96	.....	* 4.05	2,204.91
Sunset Wells	.....	.....	.23	.....	.....	2.80	3.03
Sunset Source	421.84	34.05	56.30	1,307.04	20.80	* .30	1,840.33
Olmstead	49.56	7.72	.....	315.93	6.63	.....	379.84
Bernal Heights	87.74	10.88	1.96	4.26	19.68	.....	124.52
St. Germain	158.70	13.95	34.68	16.60	56.99	.....	280.92
	$ 2,958.66	$251.22	$ 422.01	$ 9,507.44	$ 810.12	$ 298.60	$14,248.05
	$34,052.56	$292.02	$2,092.63	$20,407.29	$1,558.20	$ 893.48	$59,296.18

*Repairs to Equipment.

SCHEDULE No. 12

Operating Expenses 1936-1937

City Distribution Division

	Labor	Transportation	Material	Compressor and Welder	Machine Shop	Contractual Service	Paving	Miscellaneous	Total
SOURCE OF SUPPLY									
Lake Merced	$ 5,078.11	$ 10.20	$ 354.97	....	....	$ 108.56	....	....	$ 5,608.04
Sunset Wells	42.54	3.90	14.37	....	....	....	....	$ 56.20	60.81
Sunset Pump Supply Line	1,628.29	13.65	419.84	$ 86.00	$ 156.14	396.37	....	....	2,700.29
Central Pump Supply Line	6.00	.90	....	....	12.65	....	....	....	19.55
City Pump Supply Line	157.59	6.00	....	2.25	20.15	....	....	....	185.99
	$ 6,912.53	$ 34.65	$ 789.18	$ 88.25	$ 188.94	$ 504.93	....	$ 56.20	$ 8,574.68
PURIFICATION									
Lake Merced	$ 69.00	$ .60	$ 34.78	....	....	....	....	....	$ 104.38
Sunset	.75	.15	29.61	....	....	$ 5.00	....	....	35.51
College Hill	140.30	7.30	704.10	$ 5.00	....	161.13	....	....	1,017.83
University Mound	122.61	9.45	1,067.24	....	....	.10	....	....	1,199.40
Lake Honda	6,070.23	14.73	637.86	....	$ 3.59	3.94	....	....	6,730.35
General	7,993.27	3.89	26.59	....	....	718.48	....	....	8,742.23
	$ 14,396.16	$ 36.12	$ 2,500.18	$ 5.00	$ 3.59	$ 888.65	....	....	$ 17,829.70
TRANSMISSION & DISTRIBUTION									
San Andres Line No. 1	$ 655.28	$ 17.80	$ 101.73	$ 54.00	$ 104.89	$ 1.50	$ 10.96	....	$ 946.16
San Andres Line No. 2	....	....	....	....	....	....	....	....	....
San Andres-Lake Merced	736.33	11.40	226.56	9.50	119.02	146.50	....	....	1,249.31
Lake Honda Transmission Line	26.35	.30	....	....	....	....	127.68	....	154.33
Crystal Springs Transmission Line	14.38	....	....	5.00	....	....	....	....	19.38
City Reservoirs	10,595.12	61.88	1,465.74	63.00	447.57	157.64	129.03	3.80	12,923.78
Meter Expense	37,128.65	2,800.65	24,996.92	614.50	1,079.19	1,342.09	9,421.43	*226.60* †74.80	77,231.63
Street Department Expense	14,910.98	491.80	46.60	1.50	....	35.30	....	1.95	15,488.13
Main Repairs	37,569.19	613.67	5,637.58	2,642.46	3,303.76	689.87	5,491.93	290.58	56,239.04
Service Connection Repairs	36,362.11	1,636.95	6,888.41	4,686.25	783.60	3,032.46	8,388.62	1,225.31	63,003.71
Repairs to Building and Equipment	620.01	8.25	887.82	....	1,606.21	37.46	....	....	3,159.75
Miscellaneous Supplies and Expenses	2,418.16	61.05	1,315.11	2.50	1,096.23	1,122.47	....	27.57	6,043.09
*Consumers Premises Expense	....	....	....	....	....	....	....	....	....
Superintendence	28,429.86	1,219.25	383.15	....	670.01	193.20	....	13.41	30,908.88
	$169,466.42	$6,923.00	$41,949.62	$ 8,078.71	$ 9,210.48	$ 6,758.49	$23,569.65	$ 1,410.82	$267,367.19
Total This Page	190,775.11	6,993.77	45,238.98	8,171.96	9,403.01	8,152.07	23,569.65	1,467.02	293,771.57
Total Schedule 11	34,052.56	292.02	2,092.63	....	1,558.20	20,407.29	....	893.48	59,296.18
	$224,827.67	$7,285.79	$47,331.61	$ 8,171.96	$10,961.21	$28,559.36	$23,569.65	$ 2,360.50	$353,067.75

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* Consumers Premises transferred to Commercial Expense

†Damaged Meters

Italic figures denote loss and deficiency

SCHEDULE No. 13

Operating Expenses 1936-1937

Outside of San Francisco

SOURCE OF SUPPLY	Labor	Transportation	Materials	Contractual Service		Miscellaneous	Total
SURFACE SOURCE							
San Andres Reservoir	$ 7,527.05	$ 217.86	$ 872.54	$ 1,133.56		......	$ 9,751.01
Crystal Springs Reservoir	20,920.80	1,110.12	2,661.59	4,097.66		......	28,790.17
Pilarcitos Reservoir	11,649.13	431.46	1,320.04	1,033.07		......	14,433.70
Calaveras Reservoir	12,810.42	785.21	463.95	939.42	Hay and Grain	$ 186.69	15,185.69
Niles Reservoir	......	......	......	1.70		......	1.70
	$ 52,907.40	$2,544.65	$5,318.12	$ 7,205.41		$ 186.69	$ 68,162.27
GROUND SOURCES							
Sunol Filter Beds	$ 7,610.75	$ 48.85	$ 47.07	$ 912.84	Sunol Stables	$ 27.00	$ 8,646.51
Pleasanton Wells	26.04	1.92	......	......		......	27.96
	$ 7,636.79	$ 50.77	$ 47.07	$ 912.84		$ 27.00	$ 8,674.47
SUPPLY LINES							
Bay Division Pipe Lines	$ 9,090.32	$1,376.05	$ 718.89	$ 256.32	Electric Welder Machine Shop	$ 51.38 201.81	$ 11,694.77
Stone Dam Aqueduct	5,353.75	131.87	114.31	92.48		......	5,692.41
San Andres Aqueduct	53.96	3.20	......	......		......	57.16
Pilarcitos Aqueduct	812.29	21.30	98.95	13.46		......	946.00
Crystal Springs Pump Supply Line	......	......	40.91	......		......	40.91
Belmont Pump Supply Line	......	1.84	......	......		......	1.84
Niles-Irvington Pipe Line	349.29	107.92	......	......		......	457.21
Newark-San Lorenzo Pipe Line	37.29	......	15.03	......		......	52.32
Pleasanton Pump Supply	3.43	1.60	......	......		......	5.03
Sunol Supply Line	......	......	......	......		......	......
Upper Alameda Tunnel	63.75	2.40	......	......		......	66.15
Upper Alameda Creek Diversion Dam	1,105.81	95.00	6.95	3.90	Sunol Stables	1.50	1,213.16
Calaveras Pipe Line	78.56	6.60	2.65	......	Machine Shop	1.84	89.65
	$ 16,948.45	$1,747.78	$ 997.69	$ 366.16		$ 256.53	$ 20,316.61
GENERAL EXPENSES							
Alameda System	$ 8,602.76	$ 537.23	$ 887.76	$ 422.54	Sunol Stables	$ 370.10	$ 10,820.39
Peninsula System	29,458.07	1,817.74	1,826.87	2,053.80	Boarding House Oper.	1,909.20	37,065.68
	$ 38,060.83	$2,354.97	$2,714.63	$ 2,476.34		$2,279.30	$ 47,886.07
Total Outside of San Francisco	$115,553.47	$6,698.17	$9,077.51	$10,960.75		$2,749.52	$145,039.42

SCHEDULE No. 14
Operating Expenses 1936-1937
Outside of San Francisco

	Labor	Transportation	Materials	Fuel or Power	Machine Shop	Contractual Service	Miscellaneous	Total
PUMPING STATIONS								
Belmont Pump	$ 3,008.57	$ 85.17	$ 101.16	$ 105.33	......	......	......	$ 3,300.23
Millbrae Pump	325.74	......	26.59	......	......	......	......	352.33
Crystal Springs Pump	7,744.62	705.94	587.82	73,198.94	......	$ 423.91	$ .13	82,661.36
Bay Division Pump	3,176.17	148.72	57.20	2,425.31	......	380.75	......	6,188.15
Pleasanton Pump	2,619.07	55.04	27.82	2,727.67	......	324.18	......	5,753.78
Pleasanton Twp. Water District	1,094.92	93.50	.59	......	......	2,379.61	......	3,568.62
Calaveras Aerator	......	......	......	131.72	......	......	......	131.72
San Lorenzo Pump	85.89	150.36	......	......	......	......	......	236.25
Outside Pumping Expense	$18,054.98	$1,238.73	$ 801.18	$78,588.97	......	$3,508.45	$ .13	$102,192.44
PURIFICATION								
Calaveras Reservoir	$ 427.82	$ 45.30	$ 23.93	......	......	$ 358.96	......	$ 856.01
Calaveras Aerator Plant	364.65	58.12	835.21	......	......	658.98	......	1,916.96
Sunol	745.30	128.56	356.20	......	......	284.63	......	1,514.69
Irvington Portal	1,561.56	590.92	4,052.27	......	......	623.53	......	6,828.28
Calaveras Chlorinator	890.34	552.81	4,188.58	......	......	109.78	......	5,741.51
Belmont Purification System	......	......	......	......	......	314.97	......	314.97
Crystal Springs	1,748.35	161.77	2,461.52	......	......	874.18	......	5,245.82
Portable Chlorinator Unit	......	......	4.95	......	......	......	......	4.95
Millbrae Laboratory	580.26	......	1,012.56	......	......	2,060.18	......	3,653.00
Pilarcitos Reservoir	76.88	6.72	92.69	......	......	......	......	176.29
San Andres Reservoir	452.10	15.20	909.17	......	......	348.34	......	1,724.81
San Andres System No. 1	247.96	24.77	1,313.38	......	......	190.49	......	1,776.60
San Andres System No. 2	264.45	85.68	1,660.04	......	......	681.18	......	2,691.35
Hetch Hetchy Junction Purification	1,198.49	......	1,232.97	......	......	362.01*	1,178.76	3,972.23
San Mateo Screen Tank	180.87	10.82	79.19	......	......	.28	......	271.16
General—Peninsula	2,933.07	......	234.78	......	......	589.52	......	3,757.37
General—Alameda	153.29	......	.45	......	......	362.26	......	516.00
Outside Purification Expense	$11,825.39	$1,680.67	$18,457.89	......	......	$7,819.29	$1,178.76	$ 40,962.00
TRANSMISSION AND DISTRIBUTION								
Stone Dam Aqueduct	......	$ 5.47	......	......	......	......	......	$ 5.47
Alameda Supply Line	$ 351.67	475.87	$ .40	......	......	$ 95.50	......	923.44
Alameda Transmission Line	4,435.70	480.28	551.43	......	......	471.63	......	5,939.04
Crystal Springs Pump Aqueduct	5,911.48	200.33	127.48	......	......	61.40	......	6,300.69
Crystal Springs Transmission Line	6,339.63	682.19	1,097.77	......	$27.69	21.56	$ 9.00	8,177.84
San Andres Line No. 1	1,640.97	28.66	20.47	......	......	79.74	......	1,769.84
San Andres Line No. 2	2,501.46	116.69	446.38	......	......	78.22	......	3,142.75
San Andres Line-Merced Branch	988.39	28.99	33.48	......	......	31.25	......	1,082.11
Niles Regulating Reservoir	2,446.89	46.24	60.81	......	7.43	......	......	2,561.37
Pleasanton Transmission Line	8.88	.80	......	......	......	......	......	9.68
Meter Expense	6,269.02	899.27	1,132.92	......	3.42	27.34	......	8,331.97
Outside Transmission Lines	$30,894.09	$2,964.79	$ 3,471.14	......	$38.54	$ 866.64	$ 9.00	$ 38,244.20

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* Experimental Water Treatments at Hetch Hechty Junction

SCHEDULE No. 15

Operating Expenses 1936-1937

	Labor	Transportation	Material	Com-pressor	Machine Shop	Contractural Service	Miscellaneous	Total
COMMERCIAL EXPENSE								
Collections	$ 85,478.15	$1,164.90	$ 49.90	....	.....	$23,419.48	......	$110,112.43
Reading Meters	32,056.53	344.81	326.81	$ 12.50	.....	880.84	......	33,621.49
Bookkeeping Department	94,366.63	......	3,853.98	....	.....	1,335.75	......	99,556.36
General and Miscellaneous	23,737.36	1.95	1,450.52	....	$ 87.92	6,374.94	......	31,652.69
Inspection and Service	38,004.23	6,965.63	125.17	126.75	44.88	1,232.68	$69.15	46,568.49
Shipping	9,654.77	......	290.82	....	.....	4,281.43	......	14,227.02
*Consumers Premises	10,800.00	......	......	....	.....	227.23	......	11,027.23
	$294,097.67	$8,477.29	$6,097.20	$139.25	$132.80	$37,752.35	$69.15	$346,765.71
GENERAL AND MISCELLANEOUS								
Salary of General Officers	$ 18,399.99	......	......	....	.....	......	......	$ 18,399.99
Salary of General Office Clerks	36,512.70	......	......	....	.....	......	......	36,512.70
Miscellaneous Supplies and Expense	1,610.73	$ 7.35	$3,663.96	....	$ 50.52	$ 4,480.70	$ 613.65	10,426.91
Public Utilities Commission Expense	....	......	*102.49*	....	.....	......	47,372.00	47,269.51
General Engineering	27,047.46	1,969.22	1,994.12	....	*6.28*	4,248.64	*591.17*	34,661.99
Hydrography	1,589.30	507.02	19.56	....	.....	553.44	......	2,669.32
Telephone Operation	7,839.07	......	3.11	....	.....	7,627.22	.40	15,469.80
Repairs to Telephone System	3,759.37	719.09	810.43	....	.....	67.08	......	5,355.97
Mason St. Building Operation	15,671.19	29.25	918.09	....	.....	5,356.28	417.89	22,392.70
Rest Room and Guest Cottages	959.99	11.64	621.55	....	.....	416.96	......	2,010.14
Mason St. Building Repairs	698.00	22.65	402.41	....	650.69	4,349.28	20.44	6,143.47
Advisory and Consulting Expense	....	......	......	....	.....	......	5,975.00	5,975.00
Repairs to General Structures	1,142.91	34.00	48.94	8.50	13.50	960.00	1,650.12	3,857.97
	$115,230.71	$3,300.22	$8,379.68	$ 8.50	$708.43	$28,059.60	$55,458.33	$211,145.47
OTHER OPERATING EXPENSES								
Insurance Compensation	....	......	......	....	.....	......	$ 4,485.16	$ 4,485.16
Insurance, Other	....	......	......	....	.....	......	5,659.01	5,659.01
Injuries and Damages	$ 46.02	$ 15.66	......	....	.....	$ 737.57	2,262.55	3,061.80
Pensions	....	......	......	....	.....	......	38,843.82	38,843.82
Property Taxes	....	......	......	....	.....	......	193,057.21	193,057.21
Miscellaneous	....	......	......	....	.....	......	720.00	720.00
	$ 46.02	$ 15.66	......	....	.....	$ 737.57	$245,027.75	$245,827.00
	$115,276.73	$3,315.88	$8,379.68	$ 8.50	$708.43	$28,797.17	$300,486.08	$456,972.47

Italic figures denote loss and deficiency.

*Consumers Premises transferred from Transmission and Distribution.

SCHEDULE No. 16

Additions and Betterments, Year 1936-1937

	Labor	Compensation Insurance	Material	Compressor and Welder	Paving	Contractual Service	Equipment	Miscellaneous	Total
INSIDE OF SAN FRANCISCO:									
Buildings, Structures and Grounds:									
Dumb Waiter, 3rd Floor, Mason Street Building	......	....	......	......	......	......	$ 137.32	......	$ 137.32
Use Tax on Meter, Stanford Heights	......	....	......	......	......	......	......	$ 37.20	37.20
Garage on Elsie Street	$ 284.39	$ 1.42	$ 245.12	......	......	$ .45	......	3.90	535.28
	$ 284.39	$ 1.42	$ 245.12	......	......	$ .45	$ 137.32	$ 41.10	$ 709.80
Pumping Station Equipment:									
Venturi Meter and Tube, Central Pumps	$ 272.34	$ 1.36	$ 114.87	$ 42.50	......	......	......	$ 223.41	$ 654.48
Twin Peaks and St. Germain Pump	277.49	1.29	260.71	6.50	......	$ 23.08	......	198.25	767.32
Sub-Total	$ 549.83	$ 2.65	$ 375.58	$ 49.00	......	$ 23.08	......	$ 421.66	$ 1,421.80
Transmission and Distribution:									
Reservoirs	$ 226.45	$ 1.13	$ 499.24	......	......	......	$ 390.84	$ 24.65	$ 1,142.31
Main Extensions, City Pipe System	16,044.28	80.24	27,711.70	865.13	4,107.29	1,115.05	......	8,428.01	58,351.70
Main Extensions Laid under Refunding Rules	865.48	4.34	1,817.92	38.75	17.40	6.80	......	49.90	2,800.59
Sub-Total	$17,136,21	$ 85.71	$30,028.86	$ 903.88	$4,124.69	$1,121.85	$ 390.84	$ 8,502.56	$ 62,294.60
Meters	$ 4,419.40	$ 22.09	$18,622.93	$ 75.00	$ 662.90	$ 67.31	......	$ 550.29	$ 24,419.92
Services	13,380.18	66.91	8,261.96	1,925.25	4,174.41	326.60	......	3,109.87	31,245.18
Services under Refunding Rules	131.63	.66	148.10	5.50	......	.10	......	15.30	301.29
Sub-Total	$17,931.21	$ 89.66	$27,032.99	$2,005.75	$4,837.31	$ 394.01	......	$ 3,675.46	$ 55,966.39
Total Inside of San Francisco	$35,901.64	$179.44	$57,682.55	$2,958.63	$8,962.00	$1,539.39	$ 528.16	$12,640.78	$120,392.59
OUTSIDE OF SAN FRANCISCO:									
Landed Capital:									
Crystal Springs Watershed	......	....	......	......	......	$ 105.00	......	......	$ 105.00
Source of Water Supply:									
Buildings, Structures and Grounds—									
Cottage at Millbrae	......	....	......	......	......	......	$ 159.14	......	159.14
Irvington Portal Chlorination Station	......	....	......	......	......	......	180.29	......	180.29
Rip-Rap San Andres Dam	$ 153.03	....	......	......	......	8.59	7.83	......	169.45
Sub-Total	$ 153.03	....	......	......	......	$ 8.59	$ 347.26	......	$ 508.88
Purification System:									
Equipment for Millbrae Laboratory	......	....	$ 391.09	......	......	6.84	179.32	......	577.25
Equipment for Crystal Springs	......	....	......	......	......	......	1,124.76	......	1,124.76
Sub-Total	......	....	$ 391.09	......	......	$ 6.84	$ 1,304.08	......	$ 1,702.01
General Equipment:									
Office and Miscellaneous	......	....	......	......	......	......	15,512.06	......	15,512.06
Automobiles	......	....	......	......	......	......	4,171.51	......	4,171.51
	$36,054.67	$179.44	$58,073.64	$2,958.63	$8,962.00	$1,659.82	$21,863.07	$12,640.78	$142,392.05

APPENDIX

TO

REPORT OF SAN FRANCISCO WATER DEPARTMENT

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TABLE No. 1

RAINFALL BY MONTHS FOR SAN FRANCISCO

SEASONS 1933-34 to 1936-37

From U. S. Weather Bureau

Month	Season 1933-34	Season 1934-35	Season 1935-36	Season 1936-37	Normal
July	0	0.01	0	0.03	0.02
August	T	T	0.25	0.02	0.01
September	0.14	0.13	0.08	T	0.45
October	1.49	0.88	1.44	0.69	1.12
November	0	3.76	1.24	0.01	2.35
December	4.19	4.06	3.25	2.94	3.95
January	1.03	6.23	5.77	5.26	4.54
February	4.68	2.38	10.06	4.88	3.85
March	0.07	2.31	1.01	7.05	3.14
April	0.51	3.45	1.09	0.86	1.61
May	0.12	0.01	0.49	0.06	0.80
June	0.68	0	0.28	0.59	0.18
Totals	12.91	23.22	24.96	22.39	22.02

"T" trace, amount too small to measure. 22.39 is 101.7% of normal.

TABLE No. 1-A

SEASONAL RAINFALL—WATERSHED STATIONS

SEASONS 1933-34 to 1936-37

Water Department Records

Station	Season 1933-34	Season 1934-35	Season 1935-36	Season 1936-37	Normal
San Francisco	12.91	23.22	24.96	22.39	22.02
Pilarcitos	22.86	39.25	41.56	43.90	46.20
San Andres	17.37	30.77	27.48	34.85	38.86
Crystal Springs—Upper	16.95	30.05	26.53	31.90	33.20
Crystal Springs—Lower	14.15	28.61	25.75	30.76	28.17
Crystal Springs Cottage	15.66	27.54	23.58	28.79	26.30
Lake Merced	11.89	22.93	23.44	24.15	20.96
Pleasanton	12.54	19.99	20.44	22.09	21.99
Calaveras	12.71	23.55	21.94	23.18	25.25
Sunol	13.80	21.23	20.44	21.50	21.14
Niles	11.39	19.10	16.89	19.34	20.34
Hetch Hetchy	22.66	42.22	37.94	37.23	31.57
Lake Eleanor	28.70	55.09	48.08	46.08	38.92
Moccasin	19.35	36.26	31.84	31.88	23.57

TABLE No. 2

STORAGE IN MILLION GALLONS

	1934		1935		1936		1937	
	Max. Mar. 7	Min. Oct. 25	Max. May 12	Min. Dec. 28	Max. May 15	Min. Dec. 26	Max. Mar. 31	As of June 30
Calaveras	6,597	504	15,623	6,187	22,317	16,942	31,463	26,025
Crystal Springs	5,847	3,194	9,260	7,419	14,938	15,474	18,789	17,878
San Andres ...	2,720	2,045	4,051	3,568	4,633	3,573	6,048	5,921
Pilarcitos	429	288	796	212	605	277	858	851
Lake Merced ..	1,294	1,103	1,461	1,381	1,612	1,540	1,882	1,851
City Reservoirs	111	112	107	116	104	116	120	117
Total....	16,998	7,246	31,298	18,883	44,209	37,922	59,160	52,643

TABLE No. 3

WATER DRAWN FROM HETCH HETCHY AND AUXILIARY SOURCES

(Million Gallons)

	1933-34	1934-35	1935-36	1936-37
Hetch Hetchy Water Supply............	0	12,117	13,158	10,287
Pleasanton Wells	1,154	1,803	393*	417*
Sunset Wells	1,943	1,875	294	9
Total	3,097	15,795	13,845	10,713

*For local consumption only.

TABLE No. 4

SEASONAL DRAFT ON SURFACE STORAGE AND AUXILIARY SOURCES

(Million Gallons)

1	2	3	4	5	6	7	8	9
				Seasonal Draft on Storage and Auxiliary Sources				
Year	Maximum Storage	Minimum Storage	Storage Increase During Season	Storage Decrease During Season	From Pleas-anton Wells	From Sunset Wells	From E.B.M.U.D. and H.H.W.S.	Total Seasonal Draft*
1918	20,388	12,382	....	8,006	3,603	....	....	11,609
1919	22,388	13,160	10,006	9,228	2,000	....	....	11,228
1920	16,578	9,986	3,418	6,592	2,871	....	....	9,463
1921	19,788	11,502	9,802	8,286	317	....	....	8,603
1922	20,091	12,770	8,589	7,321	397	....	....	7,718
1923	22,649	11,721	9,879	10,928	515	....	....	11,443
1924	11,721	4,266	0	7,455	4,726	....	....	12,181
1925	13,585	4,959	9,319	8,626	2,666	....	....	11,292
1926	17,859	9,618	12,900	8,241	2,536	....	....	10,777
1927	30,581	20,000	20,963	10,581	2,104	....	....	12,685
1928	30,687	18,657	10,687	12,030	762	....	....	12,792
1929	20,265	8,906	1,608	11,359	4,054	....	....	15,413
1930	16,475	6,441	7,569	10,034	4,073	341	....	14,448
1931	6,779	4,291	338	2,488	3,812	2,054	7,731	16,085
1932	30,916	18,650	26,625	12,266	277	2,083	158	14,784
1933	23,389	12,158	4,739	11,231	257	1,991	0	13,479
1934	16,998	7,246	4,840	9,752	2,655	1,914	1,390	15,711
1935	31,298	18,883	24,052	12,415	412	1,209	5,928	**19,964
1936	44,209	37,922	25,326	6,287	409	9	10,776	†17,481
1937	59,160	....	21,238	....	....	....	....	....
Av'r'ge	23,790	12,816	11,153	9,112	2,023	505	1,367	13,007

*Column 9 does not include water drawn for consumption directly from run-off. It represents depletion in storage during dry season if all the water for consumption during dry season were drawn from storage.

**Includes 5,626 million gallons "Advance" release to Alameda County Water District.

†Includes 3,295 million gallons "Advance" release to Alameda County Water District.

TABLE No. 5

CONSUMPTION IN MILLION GALLONS PER DAY

Year	San Francisco	Suburban	Total System	Max. Day	Min. Day	Max. Month	Min. Month
1930-31	49.2	3.1	52.3	66.7	41.3	57.8	47.0
1931-32	49.3	2.8	52.1	65.6	39.6	59.4	47.5
1932-33	46.4	2.7	49.1	60.4	39.9	54.3	44.6
1933-34	47.3	2.6	49.9	64.3	39.1	53.7	45.1
1934-35	48.1	2.4	50.5	65.4	41.3	58.1	46.2
1935-36	52.3	2.5	54.8	68.0	43.0	62.1	50.3
1936-37	55.1	3.4	58.5	70.7	45.7	63.8	51.8

TABLE No. 5-A

AVERAGE DAILY CONSUMPTION SINCE 1865

Year	M.G.D.	Year	M.G.D.	Year	M.G.D.	Year	M.G.D.
1865	2.4	1885	17.0	1905	34.9	1925	42.6
1870	6.0	1890	20.4	1910	35.6	1928	50.1
1875	11.7	1895	19.9	1915	42.6	1929	52.1
1880	12.7	1900	25.5	1920	36.2	1930	52.1

TABLE No. 6

DELIVERY THROUGH PIPE LINES IN MILLION GALLONS DAILY

	1933-34	1934-35	1935-36	1936-37
Water Transported into San Francisco:				
San Andres 54″ pipe	10.6	14.1	22.6	26.9
College Hill 30″ Supply Line	5.9	5.9	6.6	7.3
Baden-Merced Branch 30″ Pipe	9.2	5.8	4.1	2.4
Crystal Springs 44″ Pipe	16.3	17.2	18.2	15.9
Crystal Springs 60″ Pipe	...	...	...	2.6
From Sunset Wells	5.3	5.1	0.8	0.0
Total San Francisco Consumption	47.3	48.1	52.3	55.1
Water Transported from Crystal Springs to San Andres System:				
Crystal Springs Pump Aqueduct, etc.	19.2	25.1	22.1	29.5
Water Transported Across S. F. Bay:				
Hetch Hetchy Bay Division 60″ and 72″ Pipes to Crystal Springs	10.8	30.9	37.5	50.1
Alameda 36″ and 54″ Pipe to Millbrae	15.4	15.2	14.1	0.0
	26.2	46.1	51.6	50.1

TABLE No. 7

SOURCE OF WATER TRANSPORTED ACROSS SAN FRANCISCO BAY

YEARLY AVERAGE MILLION GALLONS DAILY

	1933-34	1934-35	1935-36	1936-37
Pleasanton Wells	2.9	4.7	0.8	0.0
Sunol Filters and Calaveras Res.	23.3	8.2	14.8	22.6
Hetch Hetchy Water Supply	0	33.2	36.0	27.5
Total	26.2	46.1	51.6	50.1

TABLE No. 8

COMPARATIVE PUMPING STATION COSTS

BELMONT PUMPS	1933-34	1934-35	1935-36	1936-37
Water pumped, gallons	5,615,122,218	5,533,645,980	4,918,838,384	Not operating
Gas burned, cu. ft.	121,578,734	121,299,612	112,494,559	
Fuel Cost	$ 17,712.25	$ 16,602.45	$ 18,396.87	$ 0
Labor Cost	38,334.82	40,815.95	41,182.08	3,008.57
Miscellaneous	1,292.63	1,442.09	1,249.35	291.66
	$ 57,339.70	$ 58,860.49	$ 60,828.30	$ 3,300.23
Cost per mil. gal.	10.21	10.64	12.37	0
Cost per mil. gal. ft.	.0410	.0420	.0482	

MILLBRAE PUMPS	1933-34	1934-35	1935-36	1936-37
Water pumped, gallons	153,480,000	Not operating	Not operating	Not operating
Gas burned, cu. ft.	3,546,344			
Fuel and Power Cost	$ 613.92	$ 0	$ 0	$ 0
Labor Cost	2,382.68	400.70	619.76	325.74
Miscellaneous	190.16	21.44	81.45	26.59
	$ 3,186.76	$ 422.14	$ 701.21	$ 352.33

Shut down July 20, 1933.

CRYSTAL SPRINGS BOOSTER PUMP	1933-34	1934-35	1935-36	1936-37
Water pumped, gallons	Not operating	Not operating	589,340,000	48,850,000
Electric Power, KWH			271,840	22,525
Power Cost			$ 1,636.12	$ 153.92
Labor Cost			600.00	49.30
Miscellaneous			76.00	10.00
			$ 2,312.12	$ 213.22
Cost per mil. gal.			3.92	4.36
Cost per mil. gal. ft.			.1937	.172

SAN ANDRES PUMP	1933-34	1934-35	1935-36	1936-37
Water pumped, gallons	7,019,890,000	9,003,640,000	8,081,690,000	10,749,520,000
Electric power, K.W.H.	7,011,200	9,984,000	8,323,160	10,454,275
Power Cost	$51,318.05	$71,680.50	$60,095.79	$73,045.02
Labor Cost	7,374.28	7,882.32	7,957.79	7,695.32
Miscellaneous	1,232.76	1,348.17	1,010.00	1,707.80
	$59,925.09	$80,910.99	$69,063.58	$82,448.14
Cost per mil. gal.	8.537	8.986	8.546	7.67
Cost per mil. gal. ft.	.0335	.0345	.0350	.0341

PULGAS PUMPS	1933-34	1934-35	1935-36	1936-37
Water pumped, gallons	3,940,760,000	1,191,170,000		
Electric Power, K.W.H.	3,068,800	1,124,800		
Power Cost	$26,673.98	$16,202.22	$ 1,925.27	$ 2,425.31
Labor Cost	7,255.30	4,824.49	4,225.54	3,176.17
Miscellaneous	266.19	396.39	746.69	579.35
	$34,195.47	$21,423.10	$6,897.50	$6,180.83
Cost per mil. gal.	8.68	17.98		
Cost per mil. gal. ft.	.0508	.1042		

CENTRAL PUMPS	1933-34	1934-35	1935-36	1936-37
Water pumped, gallons	1,909,570,000	1,993,747,000	2,453,210,000	2,652,123,000
Gas burned, cu. ft.	92,155,000	89,109,000	79,295,000	66,077,000
Oil burned, gals.				18,647
Fuel Cost	$12,553.20	$13,098.36	$12,671.76	$11,298.12
Labor Cost	23,660.56	26,354.68	27,306.03	28,499.03
Miscellaneous	612.94	1,078.42	881.78	2,621.20
	$36,826.70	$40,531.46	$40,859.57	$42,418.35
Cost per mil, gal.	$ 19.30	$ 20.33	$ 16.66	$ 15.99

NOTE: Belmont Pumps were shut down June 6, 1936.

Pulgas Pumps shut down October 23, 1934. Operated since then only intermittently to supply consumers on line when Bay Crossing Pipe is down.

TABLE No. 9

AVERAGE DAILY CONSUMPTION BY DISTRICTS

(Gallons)

District	1936-37	1935-36	Increase	Per Cent Increase
Forest Hill	291,159	255,418	35,741	14.0
Stanford Heights	7,264,732	6,698,383	566,349	8.5
Lake Honda	21,664,684	20,478,722	1,185,962	5.8
College Hill	7,205,351	6,628,238	577,113	8.7
University Mound	18,643,247	18,215,221	428,026	2.4
Total City	55,069,173	52,275,982	2,793,191	5.3
Suburban	3,417,408	2,534,683	882,725	34.8
Total Entire System	58,486,581	54,810,665	3,675,916	6.7

Note: Beginning with the new year a measurement will be kept of the water supplied the Merced Manor reservoir, and Merced Manor will be considered as a separate district.

TABLE No. 9-A

PEAK CONSUMPTION BY DISTRICTS

District	1936-37	1935-36	1934-35
Forest Hill	556,725	479,389	501,247
Stanford Heights	9,089,000	9,285,000	7,227,000
Lake Honda	25,514.000	25,646,502	25,187,758
College Hill	8,893,000	9,143,000	7,130,000
University Mound	22,434,000	23,200,000	20,470,000
Merced Manor	1,479,000	0	0
San Francisco (combined)	64,807,000	63,358,000	59,676,000
Suburban	1,912,000	7,437,000	9,441,000
System Peak	70,679,000	67,953,000	65,375,000

TABLE No. 10

UNIT COST FOR METER MAINTENANCE

Year	Meters In Use	Total Cost	Cost Per Meter	Labor Cost Per Meter	Material Cost Per Meter
1931-32	114,441	$41,831.16	$0.37	$0.216	$0.116
1932-33	114,677	44,101.57	0.39	0.220	0.122
1933-34	114,914	44,457.18	0.39	0.207	0.137
1934-35	115,881	44,031.65	0.38	0.210	0.119
1935-36	114,482	65,775.43	0.58	0.296	0.203
1936-37	116,606	77,231.63	0.66	0.318	0.214

TABLE No. 11

UNIT COST OF METER INSTALLATION

	1936-37	1935-36	1934-35	1933-34
Meters Set	3,257	2,173	925	949
Per cent ¾″ and smaller	92.0	89.5	84.7	83.5
Labor	$1.08	$1.17	$1.06	$1.38
Supervision	.28	.41	.97	.95
Meter	9.92	11.71	12.85	12.43
Material	0.45	.57	3.39	5.90
Equipment	.02	.12	.12	.22
Paving	.20	.17	.28	.29
Miscellaneous	.20	.04	.43	.24
Total	$12.15	$14.15	$19.10	$21.39

TABLE No. 13

PIPE RECORD FOR FISCAL YEAR

July 1, 1936, to June 30, 1937

Wrought Iron and Steel SIZE	Total Pipe in Ground July 1, 1936	Pipe Laid in 1936-1937	Total	Taken out or abandoned 1936-1937	Total Pipe in Ground June 30, 1937
½″	1,644′	0′	1,644′	0′	1,644′
¾″	12,551	0	12,551	0	12,551
1″	42,838	401	43,239	252	42,987
1¼″	4,168	0	4,168	0	4,168
1½″	177,942	7	177,949	636	177,313
2″	306,846	3,530	310,376	1,156	309,220
Galv. 3″	28,291	0	28,291	267	28,024
G. & D. 4″	8,809	0	8,809	0	8,809
Galv. 5″	804	0	804	0	804
Dip. 6″	3,832	0	3,832	0	3,832
Galv. 6″	117	0	117	0	117
Galv. 8″	17	0	17	0	17
Galv. 12″	6,555	0	6,555	0	6,555
13″	456	0	456	0	456
16″	18,869	6,718	25,587	0	25,587
20″	43,433	22,154	65,587	0	65,587
22″	25,017	0	25,017	640	24,377
23½″	9,087	0	9,087	0	9,087
24″	12,649	13,794	26,443	0	26,443
30″	26,890	0	26,890	0	26,890
33″	2,409	0	2,409	0	2,409
36″	28,261	12,143	40,404	0	40,404
37½″	8,896	0	8,896	0	8,896
44″	9,250	5,568	14,818	0	14,818
48″	11,504	0	11,504	0	11,504
Totals	791,135′	64,315′	855,450′	2,951′	852,499′
C. I. Pipe					
2″	5,732′	4,614′	10,346′	0′	10,346′
3″	62,322	8	62,330	0	62,330
4″	474,419	2,504	476,923	0	476,923
6″	1,445,881	21,527	1,467,408	550	1,466,858
8″	1,296,010	8,549	1,304,559	0	1,304,559
10″	6,873	0	6,873	0	6,873
13″	368,791	20,523	389,314	0	389,314
16″	240,513	225	240,738	0	240,738
20″	22,642	0	22,642	0	22,642
22″	19,058	0	19,058	0	19,058
24″	52,171	0	52,171	0	52,171
30″	6,138	0	6,138	0	6,138
Total	4,000,550′	57,950′	4,058,500′	550′	4,057,950′
Grand Total......	4,791,685′	122,265′	4,913,950′	3,501′	4,910,449′
Total Miles.......	907.52	23.16	930.68	.66	930.02

TABLE No. 12

UNIT COST OF SERVICE CONNECTION

	1936-37	1935-36	1934-35	1933-34	1932-33
Services Installed	2,082	1,548	470	491	708
Per cent ¾"	93.4	92.4	85.5	80.0	90.8
Labor	$5.99	$7.10	$5.75	$7.35	$7.96
Supervision	.43	.58	1.91	1.83	1.27
Material	3.97	4.64	5.60	5.97	3.42
Equipment	.93	1.49	.47	.97	1.35
Miscellaneous	1.68	.96	1.25	3.40	2.74
Paving	2.00	1.66	3.02	1.66	1.79
Total	$15.00	$16.43	$18.00	$20.19	$18.50

TABLE No. 13-A

VALVE RECORD

In the City Distribution Division, June 30, 1937

Gates		Service Gates		Stop Cocks		Blow Offs		Air Valves		Check Valves	
2"	38	3"	317	⅝"	18	¾"	10	¾"	27	1½"	7
3"	228	4"	278	¾"	135	1"	45	1"	9	2"	10
4"	952	6"	157	1"	194	1½"	289	1½"	283	3"	1
6"	2,815	8"	90	1½"	983	2"	754	2"	207	4"	7
8"	2,602	12"	2	2"	2,677	3"	168	3"	5	6"	19
10"	6					4"	137	4"	1	8"	19
12"	735					6"	140	6"	12	12"	3
16"	365					8"	84	8"	185	16"	3
20"	23					12"	16				
22"	20					16"	2				
24"	54										
30"	19										
36"	15										
37½"	2										

TABLE No. 15

Gross Metered Service Revenues, Service Charges and Special Service Revenues. Also Record of Refunds, Allowances, Adjustments, Collections and Balances Due. Comparisons—Fiscal Years 1933-34 to 1936-37.

	1933-34	1934-35	1935-36	1936-37
Metered Service—Standard Rates				
Residential	$2,913,688	$2,757,225	$2,693,267	$2,809,315
Commercial (Incl. Contrs.)	2,778,073	2,652,935	2,571,334	2,659,928
Industrial	345,880	404,637	409,045	437,155
Municipal	240,660	259,970	234,361	259,090
Docks	66,451	68,583	64,613	61,329
Suburban	258,760	250,766	274,373	325,094
Total	$6,603,512	$6,394,116	$6,246,993	$6,551,911
For Water Delivered	$5,371,460	$5,234,564	$5,136,455	$5,414,263
Ratio	81.4%	81.9%	82.2%	82.7%
Service Charges	1,232,052	1,159,552	1,110,538	1,137,648
Ratio	18.6%	18.1%	17.8%	17.3%
Special Service				
Fire Hydrants (S. F.)	$ 209,351	$ 177,447	$ 217,563	$ 221,859
Street Work and Sewers	262	216	248	306
Contractors—Flat Rates	958	742	775	2,360
Shipping—Hose Truck	40,552	38,987	38,146	33,466
Suburban—Special Contracts	22,735	27,585	39,193	39,746
Total	$ 273,858	$ 244,977	$ 295,925	$ 297,737
Total Gross Charges	$6,877,370	$6,639,093	$6,542,918	$6,849,648
Deductions				
Cash Refunds	$ 967	$ 2,074	$ 929	$ 1,061
Allowances and Adjustments	22,114	20,137	20,428	21,673
Profit and Loss	25,113	70,564	8,054	4,855
Total	$ 48,194	$ 92,775	$ 29,411	$ 27,589
Net Sales	$6,829,176	$6,546,318	$6,513,507	*$6,822,059
Collections	6,382,118	6,278,202	6,153,467	6,398,425
Balances due on Cons. Accts.	617,703	499,265	467,959	473,418

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*Affected by rate reduction of Jan. 1, 1937 amounting to $29,903.

TABLE No. 14

CURRENT CONTRACT DATA—1936-37

Contract No.	Title of Contract	Division	Contractor	Date Awarded	Date Completed	% Finished	Bid Price	Contract Payments to 6/30/37	Date Final Payment
*53	Submarine Section of Bay Crossing Pipe Line No. 2	Alameda and Peninsula	Pacific Bridge Co.	3/11/35	6/22/36	100%	$ 698,226.25	$ 736,913.30	7/ 8/36
*58	Laying 12″ and 16″ C.I. Feeder Mains in Central Part of San Francisco	City Dist.	Lowrie Paving Co.	1/13/36	7/14/36	100%	58,375.30	51,164.34	7/21/36
*79	Crystal Springs Pipe Line No. 2—Millbrae to University Mound	Peninsula	Youdall Construction Co.	2/10/36	4/26/37	100%	1,303,624.50	1,274,315.31	4/26/37
*80	Crosstown Pipe Line—44″ and 36″	City Dist.	MacDonald & Kahn Co., Ltd.	2/10/36	11/17/36	100%	193,994.50	196,620.37	11/30/36
81	Repaving Street and Sidewalk Openings for 1935-36	City Dist.	Chas. L. Harney	6/30/35	6/30/36	100%	35,284.00	35,222.79	7/ 8/36
*90	Crystal Springs Outlet Tunnel No. 2	Peninsula	MacDonald & Kahn Co., Ltd.	11/25/35	7/22/36	100%	59,995.00	61,357.20	8/ 7/36
*100	Constructing Central Pumps Reservoir	City Dist.	MacDonald & Kahn Co., Ltd.	1/27/36	12/31/36	100%	157,308.00	165,210.06	1/15/37
*101	Laying 20″ and 24″ Steel Feeder Mains in San Francisco	City Dist.	MacDonald & Kahn Co., Ltd.	1/16/36	8/25/36	100%	137,964.00	135,005.08	9/11/36
*104	Laying 6″ and 8″ C.I. Mains—Esmeralda to Silver Ave. and Waterville to Mission	City Dist.	Pacific States Construction Co.	1/27/36	8/ 5/36	100%	26,420.10	25,637.69	7/13/36
*106	Laying 20″ Steel Feeder Mains in Park-Presidio and Sunset Districts	City Dist.	Lowrie Paving Co.	2/10/36	11/11/36	100%	126,696.00	128,243.55	11/30/36
**107	Reconstruction of Portions of Pilarcitos and Stone Dam Aqueducts	Peninsula	Union Paving Co.	6/29/36	1/27/37	100%	119,297.50	112,361.53	2/28/37
*110	Excavation and Embankment for Sunset Reservoir	City Dist.	Piombo Bros.	4/20/36	4/27/37	100%	238,121.00	195,713.51	4/30/37
*111	Concrete Lining, Roof and Control Works for University Mound Reservoir	City Dist.	MacDonald & Kahn Co., Ltd.	11/ 2/36	....	38%	692,916.00	230,929.23	....
*112	Crystal Springs Pipe Line No. 2—Crystal Springs Dam to Burlingame	Peninsula	Williams Bros. & Haas, Inc.	12/21/36	....	55%	644,185.95	316,875.93	....
**113	Pulgas Outfall Improvements	Peninsula	(Bids rejected. See No. 136.)	....	....	.....	....	....	....
*114	Laying 12″ C.I. Feeder Mains in Harrison St.—First to Essex	City Dist.	W. J. Tobin	7/13/36	8/18/36	100%	867.20	891.20	10/10/36
*115	Relocate 20″ Steel Feeder Main in Sloat Blvd.—23rd to 25th Avenues	City Dist.	Chas. L. Harney	7/13/36	9/11/36	100%	3,302.00	3,130.39	10/ 5/36
116	Repaving Street and Sidewalk Openings for 1936-37	City Dist.	Lowrie Paving Co.	6/22/36	6/30/37	100%	34,514.00	35,717.32 ✓	7/24/37
117	Painting Water Department Office Building—425 Mason Street	General	D. Zelinsky & Sons, Inc.	6/22/36	7/29/36	100%	1,265.00	1,265.00 ✓	7/31/36
**119	Fencing Portions of Calaveras Reservoir	Alameda	Anchor Post Fence Co.	8/31/36	12/22/36	100%	4,799.74	4,705.05	2/28/37
121	Laying 6″ C.I. Mains in University St. and Twin Peaks Boulevard	City Dist.	W. J. Tobin	8/24/36	9/18/36	100%	1,093.70	900.08 ✓	10/ 7/36

122	Laying 6″ C.I. Mains in Lakeside Subdivision	City Dist.	M. J. Lynch	8/24/36	10/30/36	100%	1,650.00 ✓	1,553.82	10/31/36
123	Gathering and Delivering Walnut Crop at Sunol Orchard	Agricultural	Chas. H. Schween & Son	9/14/36	11/15/36	100%	4,860.00	5,065.36	11/17/36
125	Laying 6″ and 2″ C.I. Mains in University Terrace	City Dist.	Fay Improvement Co.	9/28/36	12/17/36	100%	1,455.27	1,169.56	11/30/36
126	Laying 8″ C.I. Mains in Hunters Point and Golden Gate Heights Districts	City Dist.	W. J. Tobin	9/28/36	12/ 2/36	100%	2,928.20	2,677.53	1/30/37
127	Laying Miscellaneous Pipe Lines in San Francisco	City Dist.	W. J. Tobin	11/23/36	1/ 3/37	100%	1,550.96	1,067.84	12/31/36
129	Laying 6″ C.I. Main in 30th Ave.—Moraga Street South	City Dist.	W. J. Tobin	Informal	1/ 7/37	100%	450.71	354.30	1/15/37
130	Laying 6″ C.I. Mains in Normandie Terrace	City Dist.	W. J. Tobin	Informal	1/12/37	100%	322.10	284.78	1/31/37
131	Rangers Cottage and Appurtenant Structures at Davis Tunnel	Peninsula	L. Ubels	1/25/37	7/ 2/37	100%	11,614.00	11,614.00	7/ 2/37
132	Acoustical Treatment—425 Mason St.	General	Western Asbestos Co.	1/11/37	3/ 1/37	100%	2,875.00	2,875.00	3/31/37
133	Laying 8″ C.I. Mains—Treat Ave., 20th Street North	City Dist.	W. J.Tobin	Informal	1/22/37	100%	337.55	262.32	2/28/37
134	Paving Roadways at Sunol Water Temple	Alameda	Hayward Building Material Co.	1/25/37	4/24/37	100%	1,787.50	1,961.00	4/30/37
135	Laying 6″ and 8″ C.I. Mains—33rd and 45th Avenues and Alemany Boulevard	City Dist.	W. J. Tobin	Informal	2/12/37	100%	735.95 ✓	650.02	2/28/37
**136	Pulgas Outfall Improvements	Peninsula	W. O. Tyson	1/25/37	6/30/37	100%	6,742.00	7,304.78	7/16/37
137	Connections at County Line	City Dist.	S. F. Water Dept.	4/26/37	....	41%	5,292.50 ✓	....	....
138	Laying 4″, 6″ and 8″ C.I. Mains in Chester, Silver Avenues, etc.	City Dist.	E. J. Treacy	2/23/37	4/12/37	100%	1,638.75	1,569.15	4/15/37
139	Relay City Pumps Discharge Main at Ocean View Gulch	City Dist.	S. F. Water Dept.	4/12/37	5/15/37	100%	2,021.50	1,386.62	5/30/37
140	Laying 6″ C.I. Main in Ulloa St.	City Dist.	Fay Improvement Co.	Informal	5/ 5/37	100%	601.75	586.20	5/15/37
141	Replace Portion of Stone Dam Aqueduct with 48″ Concrete Pipe	Peninsula	Sibley Grading & Teaming Co.	5/24/37	....	3%	34,709.50	....	....
143	Relocate a Portion of San Andres 30″ Pipe in Holy Cross Cemetery	Peninsula	Martin Murphy	5/12/37	....	3%	5,097.50	....	....
144	Laying 2″, 4″, 6″ and 8″ C.I. Mains in Palmetto, St. Charles, Commercial and Emery Lane	City Dist.	E. J. Treacy	6/14/37	....	10%	1,229.90	....	....
145	Drilling Observation Wells at San Andres and Pilarcitos Dams	Peninsula	Robert Garcia	6/14/37	....	.....	4,120.00	....	....
146	Repaving Street and Sidewalk Openings for the Year 1937-38	City Dist.	Lowrie Paving Co.	6/28/37	....	.....	36,743.00 ✓	....	....

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* P. W. A. Docket 1510 (1933)

**P. W. A. Docket 1132 (1935)

TABLE No. 15-A

CHARGES OF NON-PAYING MUNICIPAL ACCOUNTS

For the Fiscal Years 1935-1936 and 1936-1937

	1935-1936	1936-1937	Increase	Decrease
Hydrants	$217,562.61	$221,859.30	$ 4,296.69	
Parks	58,555.68	69,886.72	11,331.04	
Municipal Railway	* 687.28	1,721.36	1,034.08	
Municipal Railway Track Repair Work.......		2.47	2.47	
Board of Public Works (Street Cleaning)	11,594.20	8,644.56		$ 2,949.64
Troughs	215.83	190.98		24.85
Auxiliary Fire System......	13,890.26	14,040.76	150.50	
Board of Public Works (Public Buildings)	28,411.54	40,342.65	11,931.11	
Department of Public Works (Street Works and Sewers)	247.92	305.59	57.67	
Fire Department	6,984.51	6,874.22		110.29
Department of Public Health	28,694.32	30,575.11	1,880.79	
Department of Public Health	1,077.78	1,015.08		62.70
Relief Home	18,252.00	18,654.13	402.13	
Exposition Auditorium	754.72	762.54	7.82	
Opera House and War Memorial Building	1,192.97	1,260.76	67.79	
Opera House and War Memorial Building	349.88	474.03	124.15	
Opera House and War Memorial Bldg. (Sprinkler)	28.56	37.04	8.48	
Purchaser of Supplies—City & County of San Francisco	16.98	15.68		1.30
Department of Electricity—General Alarm Station....	161.30	171.10	9.80	
Museums:				
Memorial Museum—Station M, Golden Gate Park—Fulton and 10th Ave....	55.20	56.64	1.44	
Curator—Palace of Legion of Honor, Lincoln Park—Clement and 39th Ave...	374.16	378.46	4.30	
Municipal Airport		678.13	678.13	
Fire Boats	547.10	466.51		80.59
Hassler Health Farm	3,252.62	2,848.57		404.05
	$392,907.42	$421,262.39	$ 31,988.39	$ 3,633.42
			$28,354.97—Net Increase	

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* Non-paying for April, May and June.

TABLE No. 15-B

Charges of Paying Municipal Accounts for the Fiscal Years 1935-1936 and 1936-1937

	1935–1936	1936–1937	Increase	Decrease
Libraries	$ 1,548.47	$ 1,683.83	$ 135.36	
Municipal Railway	1,668.55*			$ 1,668.55*
Playgrounds	19,737.59	20,968.65	1,231.06	
Schools	36,096.14	37,340.12	1,243.98	
Totals	$59,050.75	$59,992.60	$ 2,610.40	$ 1,668.55

$941.85—Net Increase

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* Nine months only—July, 1935 to March, 1936.

TABLE No. 16

Meters Installed—San Francisco District
Revenue and Non-Revenue Producing as of June 30, 1937

Revenue Producing: Class of Consumers	⅝"	¾"	1"	1½"	2"	3"	4"	6"	8"	12"	Total
Commercial	20,652	936	1,644	1,833	2,217	13	26	135	86		27,542
Residential	84,644	106	548	232	8						85,538
Docks and Shipping	144	6	18	18	82	10				2	280
Total	105440	1,048	2,210	2,083	2,307	23	26	135	86	2	113,360
Non-Revenue Producing:											
Commercial	1,507	27	19	18	23		1	3			1,598
Residential	1,635	1	6	4	2						1,648
Dock and Shipping											
Total	3,142	28	25	22	25		1	3			3,246
Check Totals	108,582	1,076	2,235	2,105	2,332	23	27	138	86	2	116,606

NOTE: The above meter count includes 561 batteries composed of 1,522 meters.

The above meter count also includes 51 consolidations composed of 137 meters.

The above meter count also includes 241 automatic sprinklers for fire purposes.

Net metered connections 115,645.

72 2-inch, 24 1½-inch, 3 1-inch.

6¾-inch at Dock and Shipping Office. Portable meters used on hydrants as needed. Also, 19 1½-inch portable meters at Hunters Point and Union Plant of Bethlehem Shipbuilding Corporation.

Previous Records

	1932–33	1933–34	1934–35	1935–36	1936–37
Total Meters	No Count	114,914	115,881	114,482	116,606
Increase		473	967	1,399*	2,124
Idle Meters		6,137	4,987	3,823	3,246

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* Decrease

TABLE No. 16-A

Meters Installed—Suburban District

Revenue and Non-Revenue Producing as of June 30, 1937

Revenue Producing:

Class of Consumer	⅝"	¾"	1"	1½"	2"	3"	4"	6"	8"	Total
Under regular rates	388	24	35	30	130	3	4	2		616
Under special contracts	1			2	35					38
Total	389	24	35	32	165	3	4	2		654
Non-Producing:										
Under regular rates	29	3	3		6					41
Under special contracts	8	3	2	3	18		2		1	37
Total	37	6	5	3	24		2		1	78
Totals	426	30	40	35	189	3	6	2	1	732

NOTE: The above meter count includes 37 accounts composed of 149 meters (112 meters in excess of accounts).

Comparsions	⅝"	¾"	1"	1½"	2"	3"	4"	6"	8"	Total
Record June 30, 1934										
Revenue Producing	363	22	37	26	146		5			599
Non-Producing	31	3	5	3	19		1			62
Total	394	25	42	29	165		6			661
Record April 30, 1935										
Revenue Producing	364	24	34	24	151		5	2		604
Non-Producing	41	4	4	3	24		1			77
Total	405	28	38	27	175		6	2		681
Record June 30, 1936										
Revenue Producing	354	25	29	35	151	3	5	2		604
Non-Producing	31	4	4	2	26		1			68
Total	385	29	33	37	177	3	6	2		672

TABLE No. 17

STREET MAIN TAPS AND SERVICE CONNECTIONS RECORD

San Francisco District—June 30th, 1937

Taps on Street Mains

	Wharf	¾″	1″	1½″	2″	3″	4″	6″	8″	12″	Totals
June 30, 1936	244	124,453	3,028	2,740	1,974	559	242	192	82		133,514
Add 1936-37		1,926	73	37	21	9	10	8	12	2	2,098
June 30, 1937	244	126,379	3,101	2,777	1,995	568	252	200	94	2	135,612

SERVICE CONNECTIONS

Services connected to street mains, as above	135,612
ADD—"Distributors," being one or more add'l meters con. to serv. pipes	9,542
Total connections of record	145,154
DEDUCT—Disconnected services	29,509
Net live services, all metered, 113,360—active; temp. S/O 3,246, less 961 extra meters in batteries	115,645

Previous Records	1933-34	1934-35	1935-36
Active	108,777	110,894	110,659
Shut-off	6,137	4,987	3,823
Totals	114,914	115,881	114,482
Less extra battery meters	881	889	1,008
Net	114,033	114,992	113,474

SERVICE INSTALLATIONS

Fiscal Year 1936-37

District	Taps	Distributors	Total
Richmond District	215	11	226
Sunset District	995	25	1,020
North Market and Western Addition	248	103	351
South Market and Twin Peaks	640	84	724
Totals	2,098	223	2,321
Previous Years			
1933-34	505	249	754
1934-35	510	217	727
1935-36	1,599	216	1,815

AUTOMATIC SPRINKLER INSTALLATIONS

Fiscal Years 1933-34 to 1936-37

Size	1933-34	1934-35	1935-36	1936-37	Total
4-inch	1	0	0	0	1
6-inch	14	11	4	6	35
8-inch	14	7	6	9	36
12-inch	0	0	0	2	2
Totals	29	18	10	17	74

TABLE No. 18

OFFICIAL METER TESTS

During Fiscal Year Ending June 30, 1937
Percentage of Variation

	0%	1%	2%	3%	4%	5%	6%	8%	15%	Number Tested Total	Number Tested Ratio
Fast	..	54	24	8	3	..	..	..	..	89	51.0%
Slow	..	31	4	4	..	..	..	..	..	39	23.0%
O.K.	45	..	..	..	..	..	..	..	..	45	26.0%
Total	45	85	28	12	3	..	..	..	..	175	100.0%
Previous Totals:											
Year 1933	28	36	14	10	6	3	..	..	..	97	
1934	25	24	21	11	3	2	1	..	..	87	
1935	48	56	39	19	11	6	..	..	1	180	
1936	78	74	37	17	3	..	1	1	..	211	

Refunds account of over-registration—$28.46 (1937)
Increased account of under-registration— 6.33 (1937)

TABLE No. 19

RECORD OF BAD WATER COMPLAINTS

Comparisons of complaints received during the Fiscal Years 1933-34 to 1936-37, with reference to the reservoirs supplying

	1933-34	1934-35	1935-36	1936-37
University Mound	418	267	248	182
College Hill	117	59	155	67
Lake Honda	1,016	344	241	290
Forest Hill	34	6	7	7
Clarendon and Stanford Hts.	233	70	65	62
Presidio Heights	85	39	24	32
Merced Manor	...	...	...	4*
Totals	1,903	785	740	644

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* Includes only 2 mos. period.

TABLE No. 21

RECORD OF BUILDING PERMITS

Issued by the Department of Public Works During the Fiscal Years 1933-34 to 1936-37

	1933-34	1934-35	1935-36	1936-37
Class "A"	$ 350,500	$ 169,100	$ 551,822	$ 665,000
Class "B"	63,200	291,350	377,000	1,974,375
Class "C"	351,207	376,505	666,988	1,339,529
Frames	1,909,857	1,930,830	6,593,777	9,523,668
Alterations	2,140,916	2,617,551	3,092,458	4,143,332
Public Buildings	2,625,070	3,310,294	1,535,608	206,110
U. S. Government	3,323,950	116,283	999,166	1,312,447
State Buildings	185,586	1,261,109	222,448	289,316
Golden Gate Bridge	......	......	126,100	......
1939 Exposition	......	......	356,970	3,290,323
Bay Bridge	......	......	......	14,633
Totals	$10,950,286	$10,973,022	$14,522,337	$22,758,733

TABLE No. 20

RECORD OF NO WATER COMPLAINTS

Fiscal Years 1933-34 to 1936-37

(a) Those for which the Department was responsible:

Choked Pipes	128	241*	149	80
Service or main broken	25	30	39	37
Service or main too small	54	55	88	76
Elevation too high	44	64	32	15
S/O at Main or Meter	51	72	92	65
District Temp. S/D	21	23	87	22
Service or Meter Frozen	...	...	...	10
Totals	323	485	487	305
Percentage	34.4%	48.2%	48.5%	32.3%

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* A/c PWA work.

(b) Those for which the Consumers were responsible:

House Valves Closed	210	192	189	145
House Pipe too small	44	41	35	86
False Reports	170	186	198	181
Valves out of order	166	86	64	76
House Pipe broken	8	9	17	24
Building too high	4	2	3	0
Overloaded service	13	6	12	17
Housepipe frozen	...	...	...	111
Totals	615	522	518	640
Percentage	65.6%	51.8%	51.5%	67.7%
Total "No Water"	938	1,007	1,005	945

TABLE No. 22

NUMBER OF BUILDING PERMITS

Issued by the Department of Public Works During the Fiscal Years 1933-34 to 1936-37

Class "A"	11	26	6	9
Class "B"	5	11	9	20
Class "C"	56	56	115	111
Frames	446	513	1,449	2,068
Alterations	4,219	4,662	4,882	5,898
Public Buildings	37	27	32	13
U. S. Government	20	11	7	6
State Buildings	5	3	5	5
Golden Gate Bridge	..	..	1	..
1939 Exposition	..	..	1	8
Bay Bridge	..	..	..	1
Totals	$4,799	5,309	6,507	8,139

TABLE No. 23

Number of Contractors' Jobs Handled by the Builders' and Contractors' Supply Section

Totals during the Fiscal Years	1933-34	793
	1934-35	807
	1935-36	1,717
	1936-37	2,764

TABLE No. 24

RETURNS AND EXPENSES—AGRICULTURAL DIVISION

RETURNS

	1932–1933	1933–1934	1934–1935	1935–1936	1936–1937
Cash Rentals Accrued	$50,189.34	$41,679.16	$55,192.44*	$48,039.83*	$39,760.69†
Taxes Paid by Tenants	2,511.01	2,055.61	1,695.70	974.30	1,817,15‡
Share Crop Rentals	8,865.58	10,347.65	7,312.58	8,639.97	9,426.48
Walnut Sales	28,982.12	23,365.83	18,078.86	26,862.23	27,385.40
Totals	$90,548.05	$77,448.25	$82,279.58	$84,516.33	$78,389.72

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* Includes $15,000 from Park Commission for Harding Park.

† Exclusive of any amount due from Park Commission.

‡ Includes $819.54 due from Crystal Springs Country Club but not paid, 1936-1937 taxes.

EXPENSES

	1932–1933	1933–1934	1934–1935	1935–1936	1936–1937
General:					
Salaries	$11,333.81	$ 9,963.62	$10,918.53	$10,390.80	$ 9,849.96
Office and Miscellaneous	404.16	353.89	222.17	227.25	172.14
Automobile Service and Depreciation	1,543.39	1,266.02	1,071.54	865.65	1,007.00
Share Crops:					
Storage, insurance, handling, freight	2,417.94	2,304.70	1,360.61	1,257.33	735.75
Care of Properties:					
Repairs—Buildings, fences, etc., weed and rodent control	2,762.65	1,891.60	3,255.72	2,367.40	3,461.05
Boundary Surveys and Fencing:					
Surveys	....	2,088.87	406.27	3,006.67	....
New Construction	....	2,199.05	1,116.79	....	....
Walnut Orchard:					
Care of Orchard	8,288.85	5,510.66	5,668.57	6,901.20	5,443.37
Crop Harvest	5,849.56	4,263.25	4,254.66	6,054.09	5,676.18
Packing House and Selling Expense	5,967.64	6,135.48	4,807.16	4,639.24	4,332.49
Totals	$38,568.00	$35,977.14	$33,082.02	$35,709.63	$30,677.94

ORGANIZATION AND PERSONNEL

N. A. Eckart	General Manager and Chief Engineer

WATER PRODUCTION AND ENGINEERING

T. W. Espy	Engineer of Water Production
I. E. Flaa	Hydraulic Engineer
C. A. Lauenstein	Assistant Hydraulic Engineer
A. W. Ebright	Supt. Alameda Division
W. R. Anderson	Asst. Supt. Alameda Division
G. J. Davis	Supt. Peninsula Division
S. M. Millard	Asst. Supt. Peninsula Division
G. E. Fanning	Photographer

CITY DISTRIBUTION

G. W. Pracy	Supt. City Distribution
O. G. Goldman	Asst. Supt. City Distribution
J. J. Miley	General Foreman City Pipe System
Joseph Kappeler	General Foreman Services and Meters
Thomas Mayhew	Storekeeper
R. W. Tullis	Foreman Machine Shop

WATER PURIFICATION

G. E. Arnold	Chief Water Purification Engineer
F. F. De Martini	Asst. Water Purification Engineer
K. Fraschina	Asst. Water Purification Engineer

WATER SALES

V. E. Perry	Manager Water Sales Division
A. M. Cooley	Asst. Manager Water Sales Division
W. D. Ryder	Supervisor Consumers' Accounts
J. E. Huntoon	Asst. Supervisor Consumers' Accounts
A. W. Till	Supervisor of Collections
F. S. Hobro	Asst. Supervisor of Collections
R. P. Scott	Chief Clerk
J. C. Joost	Supervisor Docks and Shipping Sales
C. C. Young	Chief Meter Inspector
Joseph Conway	Consumers' Complaint Investigator

LANDS AND AGRICULTURE

F. W. Roeding	Superintendent Agricultural Division
F. Peters	Asst. Supt. Agricultural Division

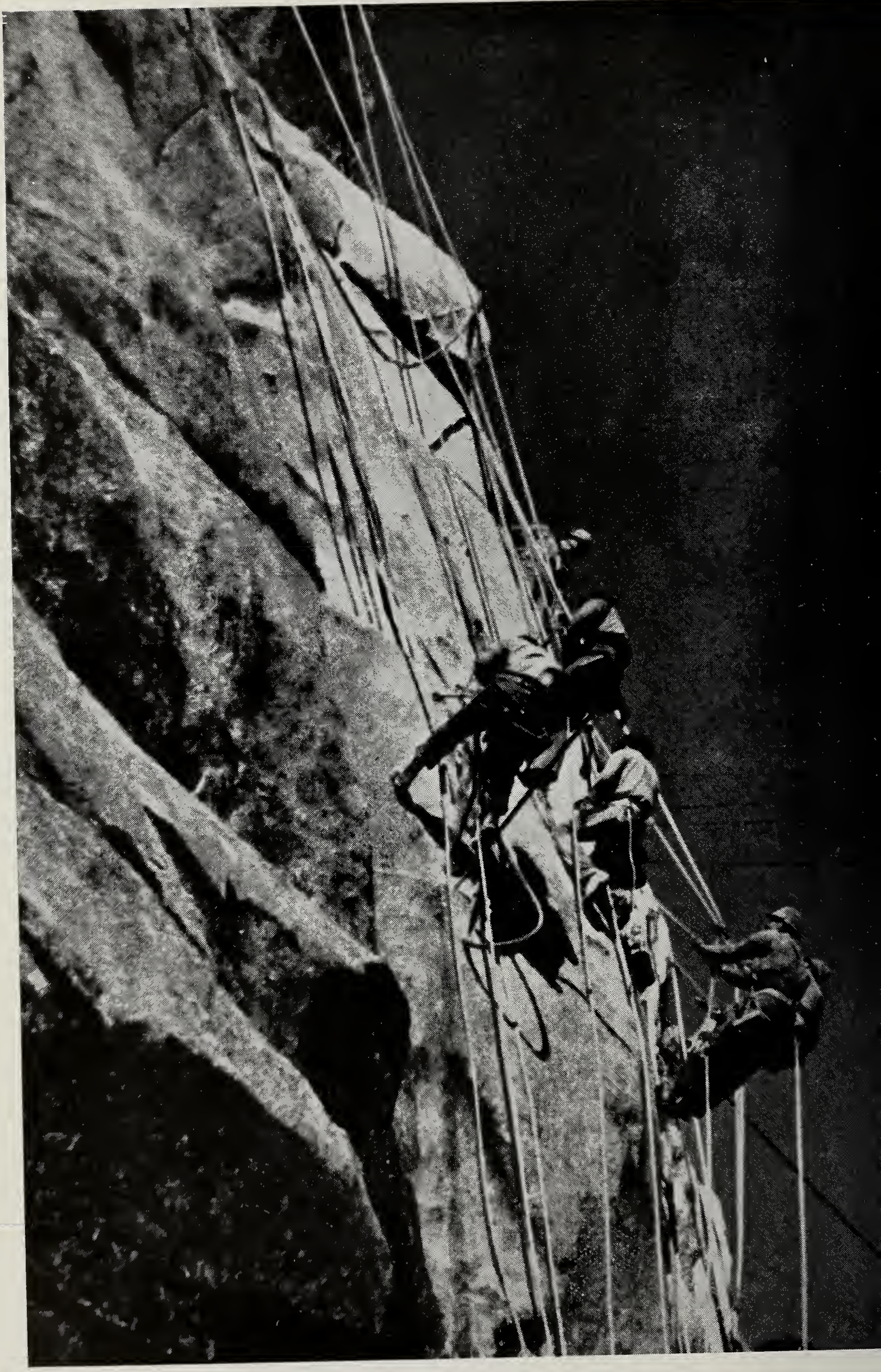
ACCOUNTS

J. J. Sharon	Auditor
E. J. White	Assistant Auditor
H. J. Pachtner	Senior Bookkeeper
H. M. Kinsey	Cashier

RETIRED—1936-1937

During the past fiscal year the following employees were retired from service, and recognition is given on account of their faithful service in the organization:

George H. Ehrhorn—Senior Clerk	46 Years' Service
Louis H. Coleman—Senior Clerk	43 Years' Service
Patrick J. Lynch—Carpenter	34 Years' Service
Edward E. M. Hibbert—General Clerk	29 Years' Service
Clifford C. Stewart—General Clerk	26 Years' Service
Daniel D. Coleman—Laborer	23 Years' Service
Harry Miller—Engineer, Stationary	19 Years' Service
Timothy Lynch—Pipe Calker	17 Years' Service



HIGH SCALERS AT WORK, O'SHAUGHNESSY DAM
View shows crew at work on north abutment removing granite as part of heightening of dam.

HETCH HETCHY WATER SUPPLY

BUREAU OF ENGINEERING

L. T. McAFEE
Utilities Engineer

L. T. McAFEE
Chief Engineer and Manager Hetch Hetchy Water Supply

Operation of the Hetch Hetchy Aqueduct continued during the year, with delivery of 10,339 million gallons of mountain water to the reservoirs of the San Francisco Water Department, making a total delivery of 36,002 million gallons since the aqueduct was put in operation October 18, 1934. This total is about equal to 1.5 years' supply to consumers at the present rate of use, plus allowance for evaporation from reservoirs. After the storage in these reservoirs had been built up to a safe amount, the delivery from Hetch Hetchy was reduced.

Exceptionally heavy snowfall and unusually low winter temperatures at Hetch Hetchy made necessary a two months' delay in the construction of the enlargement of O'Shaughnessy Dam, but excellent progress has been made since then and it is expected that the work will be completed by the end of 1937 before the winter reaches its greatest severity.

The Moccasin Creek Diversion Dam and by-pass conduit, and the Moccasin storm water drainage system were completed and put into service.

Construction for the Water Department of the portion of the new Crystal Springs Pipe Line from University Mound Reservoir to Millbrae was completed under the supervision of the Hetch Hetchy Department. The other section, from San Mateo to Crystal Springs Dam, is more than 50 per cent complete and is proceeding rapidly.

At the San Francisco Airport near San Bruno, the new Administration Building was practically completed, and about 90,000 cubic yards of earth and rock levee was placed on the tide lands for the construction of a breakwater, a levee, and a dry land area, in preparation for dredging operations to form a seaplane harbor. The department also supervised extensive Works Progress Administration jobs at the airport.

On the Yerba Buena Shoals fill in San Francisco Bay, the site of a future airport of the City, but which will first be occupied by the Golden Gate International Exposition, a number of buildings are being erected under the supervision of this department. Prior to the work on the Shoals, the Exposition Administration Building, at Bush and Stockton Streets, was completed. These buildings are to serve the purposes of the Exposition, and three of them are of permanent construction and will become the principal buildings of the airport.

Organization and Personnel:

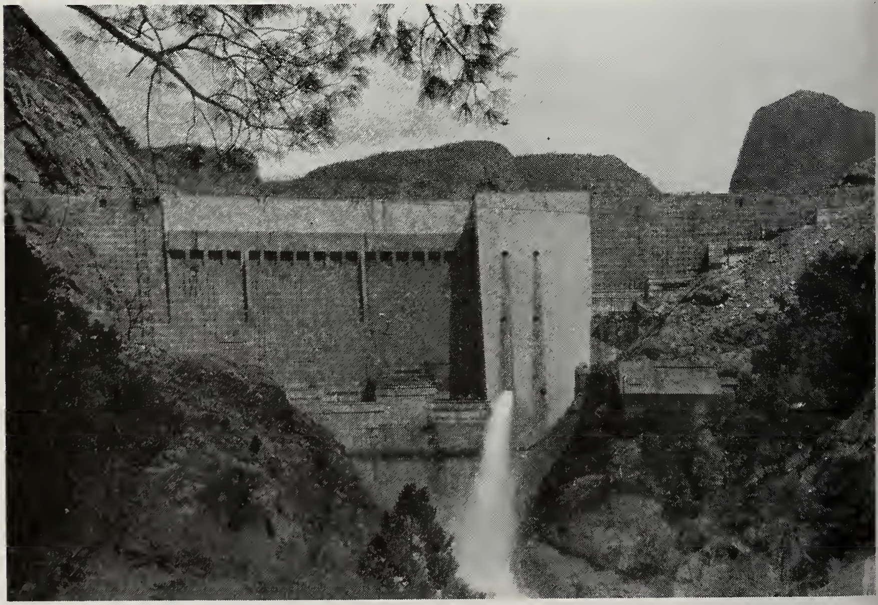
The department is in charge of L. T. McAfee, Utilities Engineer, assisted by L. W. Stocker, Chief Civil Engineer. In all matters involving electrical engineering, valuable aid is rendered by Paul J. Ost, Manager and Chief Electrical Engineer, Electric Power Bureau. All concrete methods and materials are subject to the approval of C. L. Cook, engineering chemist, Department of Public Works, who acts as concrete technologist, as consultant on materials, and as engineer of tests of materials.

Headquarters engineering work is done by the Bureau of Engineering of the Public Utilities Commission, a group of civil, structural, mechanical, and electrical engineers with necessary technical assistants and clerical force. When provided with authority and funds from the appropriate departments, this bureau performs all office engineering and field inspection for Municipal Railway, Electric Power Bureau, Airport and Hetch Hetchy Water Supply.

Publicity:

The department collaborates with the Bureau of Public Relations in preparation of literature and lectures describing the water supply system and related work.

Many trips are made over the work by engineers and public bodies. These parties are always given every assistance and when necessary are accompanied



O'SHAUGHNESSY DAM CONSTRUCTION
View shows down stream face on October 10, 1936.

by an engineer from this office. The 1936 Grand Jury made a week-end trip over the work late in August, 1936. In May, 1937, the work at O'Shaughnessy Dam was visited by several members of the Federal Power Commission and by Mayor LaGuardia of New York.

Relations with U. S. Department of the Interior:

The Raker Act, under which the City acquired certain rights of way in Yosemite National Park, requires that, beginning in 1918, the City pay to the United States an annual rental of $10,000 during the first ten years, $20,000 during the next ten years, and $30,000 during subsequent years. The City is now paying $20,000 annually, and all payments are promptly made. All other financial dealings have been completed.

The engineers of the Hetch Hetchy water and power systems have freely consulted the superintendent and other officials of Yosemite National Park on matters relating to construction and operation within the Park and have received most excellent cooperation. The department regrets the passing away of Col. C. G. Thomson, superintendent, who always met the Hetch Hetchy officials and employees in a fine spirit of friendliness.

Hydrography:

Last year's report enumerated the various stream gaging stations maintained to record the streamflow of Tuolumne River and some of its tributaries. A small amount of maintenance work was necessary at these stations.

Rainfall and runoff for the present season are considerably above normal. The season has been peculiar in that the snow pack in the area between 5,000 and 7,000 feet elevation was exceptionally heavy and much above normal as compared to the pack at higher elevations. As the season ends on September 30, no summary of the runoff is yet available.

The State Division of Water Resources, in cooperation with Yosemite National Park Service, each year makes runoff predictions on the basis of snow surveys made during March, April, and May and it is interesting to compare these predicted amounts with the amounts actually measured subsequently.

	1936 May to Aug., Incl. Acre Feet Runoff		1937 April to July Ac. Ft. Runoff
	Predicted	Measured	Predicted
Tuolumne River at Hetch Hetchy	609,000	621,000	816,000
Eleanor Creek at Lake Eleanor	107,000	93,100	......
Tuolumne River at La Grange	1,137,000	1,050,000	1,636,000

In October, 1936, additional snow courses were staked out and markers were set. Two of these courses are at Mather and one at Kibbie Ridge.

The information disclosed by the snow survey was again very useful in planning the regulation of discharge from Hetch Hetchy reservoir so as to maintain the water level in the reservoir at such an elevation as to make the maximum amount of water available for the Moccasin power plant and still not interfere with the operations of the contractor on the enlargement of O'Shaughnessy Dam. During the greater part of the ordinary flood season the outlet valves were kept open so as to hold the water some 20 feet below spillway lip. After the peak runoff had passed these valves were successively closed until maximum storage was reached. Except for this valve manipulation the reservoir would have spilled very early in May and would have continued to spill until about July 15, 1937.

Lake Eleanor began to spill on March 23, 1937, and continued until June 25. Don Pedro reservoir of the Turlock and Modesto Irrigation Districts filled on May 12, 1937, and continued to spill until June 17, 1937.

The precipitation for the season 1936-37, and the runoff for the seasonal year 1935-36, follow:

PRECIPITATION

	Hetch Hetchy		Lake Eleanor		Moccasin	
Month	1936-37 Season	1910-37 Average	1936-37 Season	1910-37 Average	1936-37 Season	1910-37 Average
July	0.57	0.19	0.27	0.12	0.12	0.01
August	0.01	0.13	0.00	0.15	0.00	0.02
September	0.35	0.68	0.11	0.74	0.01	0.16
October	1.33	1.75	1.40	1.85	1.76	1.19
November	0.24	2.67	0.25	3.20	0.01	2.26
December	9.50	4.40	10.48	5.80	5.59	3.94
January	5.42	5.96	7.84	7.97	4.91	4.45
February	11.40	5.73	15.40	7.72	9.88	5.33
March	5.87	4.50	6.91	5.34	7.30	3.51
April	1.77	3.12	2.57	3.53	1.93	2.44
May	0.34	1.84	0.28	1.85	0.02	0.66
June	0.13	0.82	0.47	0.81	0.15	0.34
Total	36.93	31.79	45.98	39.08	31.68	24.31

TUOLUMNE RIVER DISCHARGE

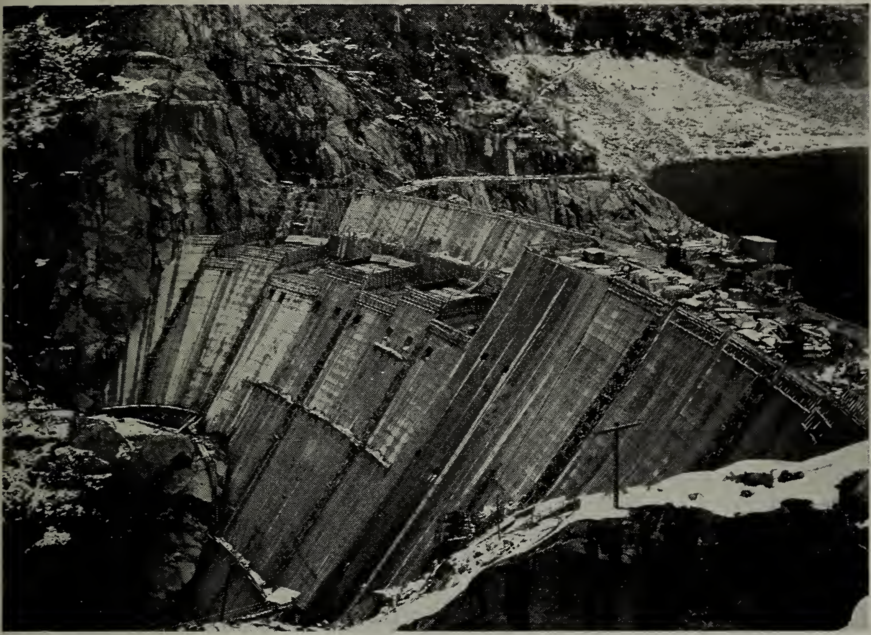
Season 1935-36 in Acre Feet

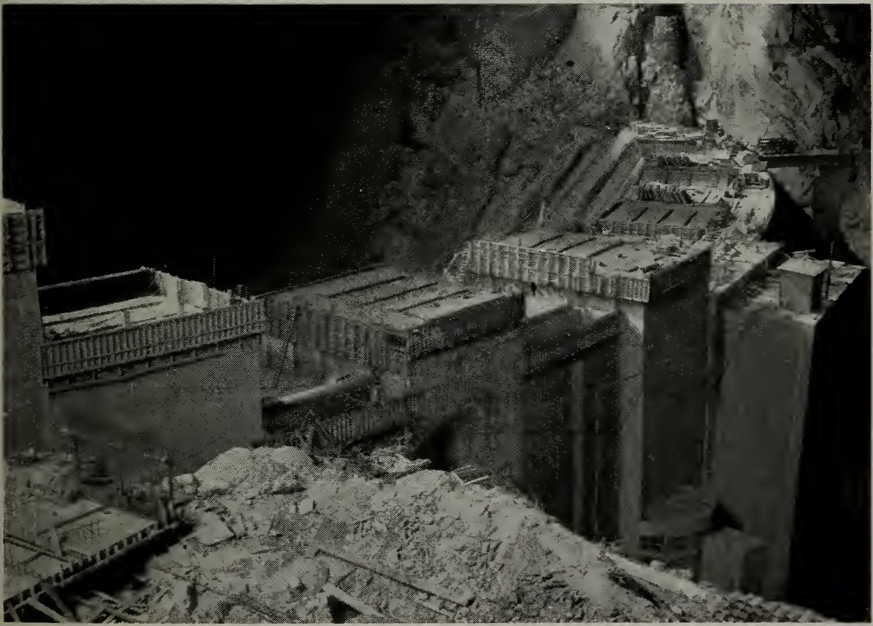
Month	Hetch Hetchy	Lake Eleanor	Cherry Creek	La Grange
October	3,600	1,000	2,300	11,600
November	5,000	2,400	3,200	19,600
December	4,100	2,200	2,400	18,200
January	17,200	11,200	10,700	104,800
February	35,800	18,300	16,300	352,000
March	50,600	24,400	24.900	207,500
April	137,000	47,800	58,700	392,900
May	283,100	54,500	97,300	520,200
June	244,300	31,400	74,200	390,200
July	81,900	6,600	14,300	122,500
August	12,000	600	700	17,800
September	3,100	300	500	2,900
Total	877,700	200,700	305,500	2,160,200

The City's defense against suits filed by various riparian owners has necessitated the measurement of stream flow at several stations on the San Joaquin, Tuolumne, and Stanislaus Rivers in the lower San Joaquin Valley. Salinity tests of the San Joaquin River water are also made.

The ground water elevation is observed at intervals of about a month in a series of about 100 wells located in the vicinity of the stream channels. A record is kept of the amounts of water pumped from the river and used for irrigation by the various districts and individuals.

During construction of the tunnel aqueduct many springs and wells adjacent to the tunnels suffered a diminution of flow and even ceased to flow. Numerous suits for damages were brought against the City. In some cases the City has accepted the responsibility for damages and is furnishing emergency supplies of water to claimants. In many cases the City disclaims responsibility but furnishes water pending adjudication, to minimize damages that may be assessed if the





O'SHAUGHNESSY DAM CONSTRUCTION
Upper—General view from south roadway taken March 25, 1937.
Lower—Shows portion of up stream face and block construction April 30, 1937.

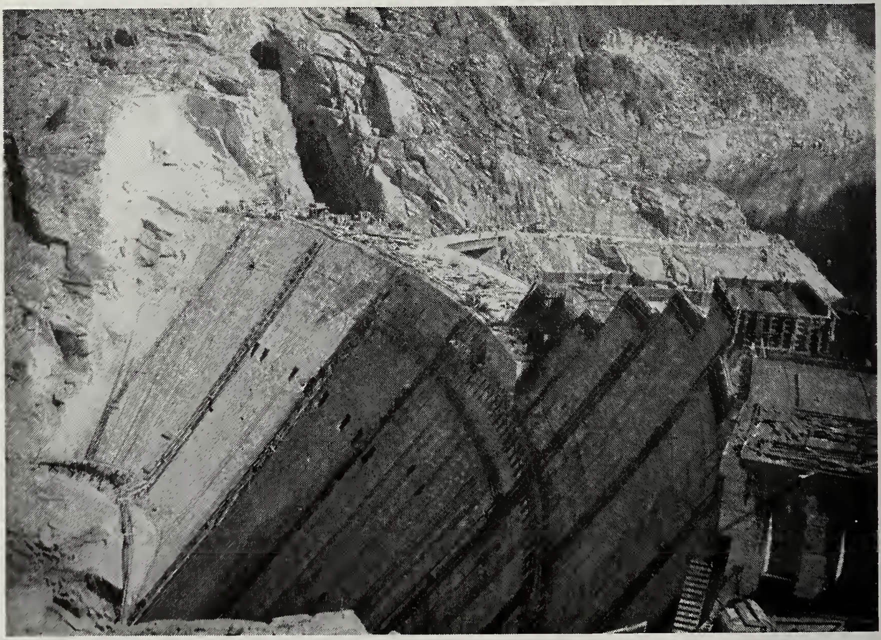
final decision is against the City. In the meantime all springs and wells adjacent to the tunnels are observed regularly and measurements of flow are made.

Many of these damage claims were presented during the "dry cycle" when rainfall was below normal for several years. The last two or three winters of normal rainfall have brought many of these springs back to a flow as good as, and sometimes better than, when first observed.

The amount of water diverted from the Tuolumne River for San Francisco during the fiscal year is shown in the following table:

1936	Million Gallons	1937	Million Gallons
July	2,074.7	January	306.8
August	2,085.8	February	205.5
September	1,853.2	March	63.1
October	1,444.7	April	223.1
November	633.9	May	213.5
December	1,055.9	June	178.7

Total	10,338.9
Diverted prior to July, 1936	25,663.4
Total diversion to San Francisco since beginning of operation of Hetch Hetchy Aqueduct	36,002.3



O'SHAUGHNESSY DAM PROGRESS

Down stream face and top June 6, 1937. Walkway in lower center of picture is approximate height of original dam.

At the end of the fiscal year, the total amount of water stored in Calaveras and the Peninsular reservoirs of the Water Department is 52,526 billion gallons; in Hetch Hetchy and Lake Eleanor, 69,170 billion gallons.

This year again witnessed the breaking of levees and the flooding of farm lands along the San Joaquin River at the Durham Bridge, a short distance downstream from the crossing of the Hetch Hetchy Aqueduct. The maximum flow of 21,600 c.f.s. occurred on June 2, 1937.

Water Litigation:

As was noted in last year's report, the City is defendant in a number of suits involving the determination of riparian rights. The status of the more important suits is shown below:

Meridian, Ltd. (El Solyo Ranch). The judgment entered on June 18, 1936, was unsatisfactory to both sides and both appealed to the State Supreme Court. The matter has been before the court during the year and it is expected that a decision will be handed down some time during September, 1937.

Modesto, Turlock, and Waterford Irrigation Districts. During the year, progress has been made toward settlement of water rights and use of water. Final agreement is contingent partly upon the decision of the State Supreme Court in the case of Meridian, Ltd., vs. the City, and the Modesto, Turlock, and Waterford Irrigation Districts.

Dan E. Williams et al. A decision was handed down in favor of the City. This was appealed by the plaintiff and the case is now before the State Supreme Court.

Hetch Hetchy Railroad:

The Sierra Railroad, which acquired the Sierra Railway of California, continues to operate the Hetch Hetchy Railroad by virtue of an agreement with Public Utilities Commission, dated June 1, 1934. The lessee maintains all track and structures and provides all labor and equipment necessary for operation. Practically the entire haul is cement and construction equipment for the work at O'Shaughnessy Dam.

Considerable difficulty was encountered in clearing snow off the track by means of a V-plow and locomotive, and it became necessary to use the City's gasoline-operated rotary plow, which proved quite successful.

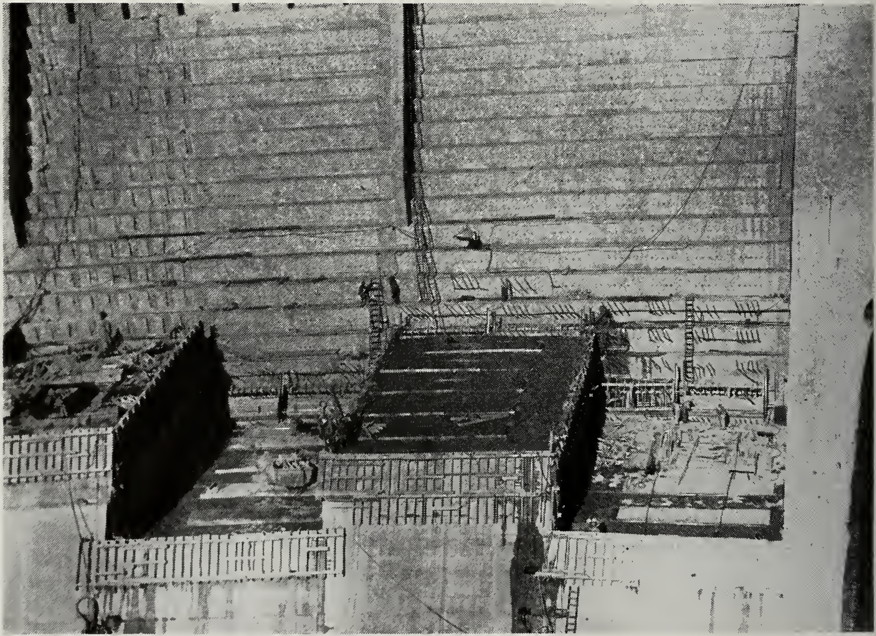
Watersheds and Impounding Reservoirs:

Two reservoirs impound the water off the granite ridges of the Sierra Nevada. The principal reservoir, Hetch Hetchy, occupies what was formerly called Hetch Hetchy Valley, which was flooded by the construction of O'Shaughnessy Dam on the Tuolumne River. This reservoir has a tributary area of 462 sq. mi. of rugged mountains, the greater part of which is rarely visited by people.

Lake Eleanor, the smaller of the two reservoirs, lies on Eleanor Creek, a tributary of Cherry River, which in turn flows into Tuolumne River. It has a watershed area of 79 sq. mi. and as no road traverses it, visitors are rare. Both reservoirs lie within Yosemite National Park. Between the reservoirs and the intake of the aqueduct there is an additional watershed area of 38 sq. mi.

Operation at Lake Eleanor is in charge of a reservoir keeper who lives close to the dam. The regular means of access is a road 12 miles long which crosses O'Shaughnessy Dam, climbs 3 miles to the rim of Hetch Hetchy Valley and then continues through difficult terrain to Lake Eleanor. Communication is by means of telephone. During the winter there are long periods when the road is closed by snow and shorter periods when telephone service is interrupted. The keeper is provided with a saddle horse. Extra maintenance crews are used to float logs over the spillway out of the reservoir, for repairs to log booms, road maintenance, etc. Plans are now under way to install a 1 kw. hydro generator at the dam to provide light and power for domestic and miscellaneous use.

At O'Shaughnessy Dam, there is a reservoir keeper and an assistant. Ordinarily it is difficult to keep the road to Mather clear of snow, but during the construction work at the dam the contractor has done this. It is planned to reconstruct three existing cottages and to build a permanent guest cottage during the coming fiscal year, and surveys have been made for this purpose.



BLOCK CONSTRUCTION—O'SHAUGHNESSY DAM

Showing four blocks under construction on north side of dam. Surface of original dam is bored for anchor bars and roughened.

O'Shaughnessy Dam:

At the close of the fiscal year, Contract 149 for the enlargement of O'Shaughnessy Dam has been 78.8 per cent completed, as against 17 per cent for the preceding fiscal year. The average number of men employed by the contractor, Transbay Construction Company, was 282. The work was uninterrupted except during January and February, 1937. A snowfall of about 3 ft. on Christmas, 1936, followed almost every day by additional snow, prevented work during that period. Employees attempting to return to work after the Christmas holidays were stalled in the snow on the "back road" from South Ford to Mather. It was reported that 50 to 75 automobiles were abandoned in the snow on this 15-mile length of road. The passengers were brought back to settlements by locomotives and snowplows on the Hetch Hetchy Railroad. A few men remained at camp to carry on routine work and attempt to keep the camp operating. Between Mather and the dam the paved road was kept open practically the entire time.

As noted in last year's report the enlargement of the dam consists primarily of excavating foundation for new concrete above river level, filling out the back of the dam to the full thickness originally contemplated, placing an 85.5 ft. addition on top, and constructing a new, channel type spillway. The work involves the placing of about 270,000 cu. yards of concrete and a total cost, including appurtenances, of about $4,000,000.

When completed the dam will be 430 ft. in height from lowest point of foundation to roadway on crest. This height is exceeded only by Boulder Dam on the Colorado River and Chambon Dam in France.

Cement for concrete is hauled via the Hetch Hetchy Railroad to Mather, 9 miles from the dam, and there transferred to hopper trucks for the remaining haul. Rock is obtained from a quarry a short distance back of camp. It is crushed to various sizes, washed and stockpiled near the concrete mixer. Sand is obtained from the Miguel Meadows pit on the road to Lake Eleanor and transported by aerial cableway 3 miles, screened and washed, and placed in stockpiles near the mixers. The concrete is mixed in two 4-cu. yd. mixers and carried to the point of deposit by a Lidgerwood cableway with Smilie control.

All concrete placed is cooled by passing refrigerated water through a network of cooling pipes set in place prior to the pouring, which become imbedded when the concrete is poured. After the concrete has cooled, cement grout under high pressure will be forced into all joints to make a homogeneous structure.

The excavation of the dam foundation, preparatory to placing concrete, was finished in the early part of the year, and the main item of progress during the year has been the placing of concrete, both in the main dam and in the spillway structure. The reservoir area to be flooded by the additional height of water has been cleared of trees and brush and the slash has been burned.

At the end of the fiscal year the southerly portion of the dam has been carried up to full height, elev. 3812 ft., which is the finished roadway, while the north side is completed to elev. 3730, the approximate crest of the old dam. The spillway construction is about the same percentage completed as the main dam.

All work at the dam is supervised by John H. Ryan, construction engineer.

Progress on contract items is shown in the following table:

CONTRACT No. 149—ENLARGEMENT OF O'SHAUGHNESSY DAM

No.	Item	Total Completed to July 1, 1936		Completed During Year	Total Completed to July 1, 1937	
1.	Clearing reservoir site	351.5	Acres	24	275.5	Acres
2.	Excavation for dam foundation—all classes	81,129	Cu. Yds.	1,175	82,304	Cu. Yds.
3.	Excavation for spillway—all classes	28,295	Cu. Yds.	50	28,345	Cu. Yds.
4.	Excavation for roads and miscellaneous excavation—common	4,920	Cu. Yds.	1,792	6,712	Cu. Yds.
5.	Excavation for roads and miscellaneous excavation—solid rock	11,770	Cu. Yds.	5,119	16,889	Cu. Yds.
5A.	Tunnel excavation	4,561.61	Cu. Yds.	....	4,561.61	Cu. Yds.
8.	Excavation of concrete from existing dam	257.6	Cu. Yds.	119.9	377.5	Cu. Yds.
9.	Roughening surfaces of existing dam	45,000	Sq. Ft.	17,000	62,000	Sq. Ft.
10.	Roughening surfaces of siphon spillway, etc.	57,680	Sq. Ft.	....	57,680	Sq. Ft.
11.	Removal of concrete structures	67.65	Cu. Yds.	144.85	212.5	Cu. Yds.
12.	Drilling grout holes in the foundations for dam and spillway, not over 30 feet deep	72	Lin. Ft.	828	900	Lin. Ft.
16.	Drilling grout holes in the existing dam from faces of dam	....		64	64	Lin. Ft.
19.	Drilling holes for anchor bars and grouting bars	10,544	Lin. Ft.	14,946	25,490	Lin. Ft.
20.	Calking joints in concrete	285	Lin. Ft.	1,093	1,378	Lin. Ft.
21.	Making connections to grout pipes in foundation for dam and spillway	....		88	88	Each
24.	Pressure grouting	....		231	231	Cu. Ft.
25.	Mass concrete in dam	10,289	Cu. Yds.	156,016	166,305	Cu. Yds.
26.	Concrete to form impervious surface in dam	2,289	Cu. Yds.	31,388	33,677	Cu. Yds.
27.	Concrete in slots in dam	....		13,748	13,748	Cu. Yds.
28.	Concrete for plugging siphon spillways	....		1,655	1,655	Cu. Yds.
29.	Concrete in spillway bridge and spillway weir	....		2,466	2,466	Cu. Yds.
30.	Concrete in valve houses, screen rack and walls and beams adjacent to valve block	....		89	89	Cu. Yds.
33.	Concrete precast stairways on downstream face	....		11	11	Cu. Yds.
34.	Concrete for spillway lining	....		26	26	Cu. Yds.
37.	Precast porous concrete blocks	20	Cu. Yds.	29	49	Cu. Yds.
38.	Drainage holes through masonry	57	Lin. Ft.	583	640	Lin. Ft.
40.	Portland cement	13,340	Bbls.	217,207	230,547	Bbls.
41.	Reinforcing steel	1,442	Lbs.	263,558	265,000	Lbs.
42.	Anchor bars	36,096	Lbs.	425,904	462,000	Lbs.
43.	Rubble masonry	496.43	Cu. Yds.	....	496.43	Cu. Yds.
46A.	Furnishing and placing ½″ metal tubing	....		1,636	1,636	Lin. Ft.
47.	Furnishing and placing 1″ wrought steel pipe	....		271	271	Lin. Ft.
47A.	Furnishing and placing 1″ metal tubing	17,724	Lin. Ft.	290,895	308,619	Lin. Ft.
48.	Furnishing and placing 1½″ wrought steel pipe	452	Lin. Ft.	5,280	5,732	Lin. Ft.
48A.	Furnishing and placing 1½″ metal tubing	1,686	Lin. Ft.	19,242	20,928	Lin. Ft.
49.	Furnishing and placing 2″ wrought steel pipe	200	Lin. Ft.	293	493	Lin. Ft.
50.	Furnishing and placing wrought steel pipe larger than 2″ pipe and not larger than 8″ pipe	....		76,581	76,581	Lbs.
51.	Furnishing and placing pipe fittings for all wrought steel pipe not larger than 8″ pipe	120	Lbs.	10,215	10,335	Lbs.
52.	Furnishing and placing metal tubing fittings for tubing not larger than 1½″	1,729	Lbs.	25,982	27,711	Lbs.
53.	Furnishing and placing 1″ gate valves	....		620	620	Each
53A.	Furnishing and placing 1½″ gate valves	....		237	237	Each
53B.	Furnishing and placing 2″ gate valves	....		156	156	Each
54.	Furnishing and placing valves larger than 2″ and not larger than 8″	....		3,936	3,936	Lbs.
54A.	Removing and reinstalling pipe and fittings	....		6,713	6,713	Lbs.
55.	Connections from headers to cooling coils	4	Each	1,765	1,769	Each
56.	Grout pipe outlets	394	Each	4,836	5,230	Each
57.	Furnishing and installing elec. metal conduit	....		450	450	Lbs.
58.	Galvanized pipe hand railing	....		4,270	4,270	Lbs.
59.	Copper water stops	86	Lbs.	10,616	10,702	Lbs.
60.	Sheet metal grout stops	2,820	Lbs.	41,780	44,600	Lbs.
61.	Corrugated metal drains	1,620	Lbs.	38,128	39,748	Lbs.
62.	Stairs, ladders and gratings	....		60,000	60,000	Lbs.
63.	Miscellaneous steel work	....		292	292	Lbs.
65.	Miscellaneous brass and bronze	....		4,640	4,640	Lbs.
66.	Galvanizing	....		60,000	60,000	Lbs.
67.	Removing miscellaneous equipment from existing dam and installing it in new location	....		2,500	2,500	Lbs.
69.	Removing accumulators and frames, etc.	33⅓%		....	33⅓%	
70.	Removing and reinstalling three 36″ valves	50%		50%	100%	
71.	Installing steel pipes connecting with valves	37,500	Lbs.	62,730	100,230	Lbs.
72.	Installing outlet valves furnished by City	....		14,310	14,310	Lbs.
73.	Installing fixed supports, pier plates, etc.	....		11,700	11,700	Lbs.
75.	Installing flanged pipe and fittings for spillway gate control	....		21,400	21,400	Lbs.
77.	Installing misc. metal work furnished by City	....		1,178	1,178	Lbs.
86.	6″ drain tile	....		465	465	Lin. Ft.
87.	Furnishing and installing a cooling plant	75%		25%	100%	
88.	Operating the refrigerating plant	....		6,946	6,946	Hours

PLACING CONCRETE—O'SHAUGHNESSY DAM
Pneumatic vibrators tamp and compact newly placed concrete.

Lower Cherry River Aqueduct:

The water from Lake Eleanor flows down Eleanor Creek and Cherry River to Cherry River Diversion Dam where it enters the Cherry River Aqueduct. This aqueduct, with capacity of 200 c.f.s., consisting of tunnel, concrete lined canal, steel pipe, and a short section of woodstave pipe, extends 3.15 miles to the concrete forebay of Cherry River (or Early Intake) Power House. A 60-inch and 36-inch overflow pipe, 3320 feet long, conveys surplus water from the forebay into the reservoir at Early Intake Diversion Dam to enter the main aqueduct to San Francisco, when the quantity entering the forebay exceeds that required for power operation. The main outlet from the forebay is the 42-inch diameter penstock pipe to the power house. The turbines of the power house may discharge directly into the Tuolumne River, as is done when water is wasting from Hetch Hetchy Reservoir, or the discharge may be conducted through a 60-inch pipe line across Tuolumne River to enter the main aqueduct and be utilized at Moccasin Power House.

Maintenance on the aqueduct consisted mainly of removing slide material from the berm on the upper side, repair and reconstruction of portions of the concrete lining, and repairs to fencing. On the 60″ overflow line, near the forebay, a rubble wall was built to protect the pipe. It is planned to install a traveling water screen in the forebay to remove leaves and water-logged debris more effectually than is now being done with the grizzly from which the trash must be removed by hand raking.

At Early Intake Camp the new cookhouse and bunkhouse built under Contract 159, awarded to the Power Division, were completed in October, 1936, at a total cost of $8,462.67. The old camp buildings were razed and the site cleaned. Maintenance work was done on the Tuolumne River Bridge and on the employees' cottages, and a metal grating was placed on the footbridge across the spillway at Intake Diversion Dam. The north side of the reservoir at the dam was fenced to exclude cattle from the reservoir and the camp.

Intake tramway extends from the railroad to the new camp and affords the only means of access when the road is blocked with snow. Trestles on the tramway were rebuilt and maintenance was done on the roadbed and signal line. Extensive maintenance work was done on the Intake road, such as building rock walls, drainage, and smoothing and surfacing with rock obtained by screening the old tunnel dump.

Road from South Fork to Mather:

The "back road" from South Fork to Mather is narrow, crooked, rough and dusty. It is the only road serving Early Intake and is shorter to Mather than the State Highway via Carl Inn. It is maintained by the City and each year it is considerably improved. In winter it is the only usable road as the parallel section of the State Highway and the connecting road from Carl Inn to Mather are not kept free of snow.

Supervisor Merrell of Groveland, Tuolumne County, has instituted a campaign to make a State Highway of this route, to supersede the present highway from South Fork to Carl Inn and provide a connection to the proposed Sierra Highway which is planned to run southerly from Sonora Pass by Lake Eleanor to Hetch Hetchy. Completion of this program would make possible the development of a winter sports area at Mather.

Main Aqueduct, Mountain Division:

This division, which extends from Early Intake to Priest Reservoir, consists of a 5-mile tunnel and a 14-mile tunnel connected by 225 feet of 9½-ft. diameter steel pipe crossing South Fork of the Tuolumne River.

At Early Intake Diversion Dam, some slight leakage in the construction joints was corrected. Sand and grit which had found their way into the river from the sand-washing plant at Hetch Hetchy were removed by operation of the blowoff gates in the base of the dam.

At South Fork crossing, rock walls were built to prevent water from undermining the pipe. The pipe was painted for additional protection against the weather.

At Second Garrote Shaft, the deep well pump which supplies water to employees living in Groveland was overhauled.

As a protection against forest fires, brush was cleared away from all structures and fire trails were cut. Shop facilities at Groveland were added to as will be noted in the report of the Power Division.

At Priest Reservoir, the usual fire protection measures were taken and considerable road maintenance work was done. Surveys were made for a new cottage for the reservoir keeper. Measurements of core-wall deflections were continued as heretofore.

Main Aqueduct, Moccasin Division:

Last year's report noted the construction under Contract 156 of the upstream diversion dam at Moccasin Reservoir to bypass the waters of Moccasin Creek. This was completed by the contractor, MacDonald & Kahn Co., Ltd., on September 4, 1936, at a total cost of $200,798.99. Statistics of the dam and the bypass conduit are shown in the following table:

DAM

Crest Elevation	Ft.	932.5	Excavation	Cu. Yds.	2,365
Crest Length	Ft.	321	Concrete	Cu. Yds.	2,917
Height above stream	Ft.	30	Reinforcing steel	Lbs.	41,682
Height, Total	Ft.	35	Structural steel	Lbs.	37,826
Crest Width	Ft.	5	Grout in foundation	Cu. Ft.	846
Base width	Ft.	40			
Spillway lip elevation	Ft.	922.5			

CONDUIT

Length	Ft.	1,724.57	Excavation	Cu. Yds.	7,275
Diameter	Ft.	10	Concrete	Cu. Yds.	3,997

Contract 158, covering grading and street work on the camp road extension to the new cottages at Moccasin and streets, curbs and sidewalks at the new cottages, was awarded to the Power Division for the estimated amount of $4,688.56. The work was completed in November, 1936.

Contract 160, for construction of a drainage system at Moccasin, was awarded September, 1936, to W. J. Tobin for the estimated amount of $15,078.32. The contract included the furnishing and laying of 2,443 feet of vitrified pipe in sizes from 6″ to 18″, and 175 feet of 18″ metal pipe, 1,780 cubic yards of excavation, 129 cubic yards of concrete, and 7 brick manholes. The concrete work includes a diversion dam and wall in Grizzly Gulch to divert certain seepage water into the storm sewers. Work under this contract was completed November 20, 1936.

Contract 169, for construction of a steel footbridge to Moccasin outlet tower, is now being prepared.

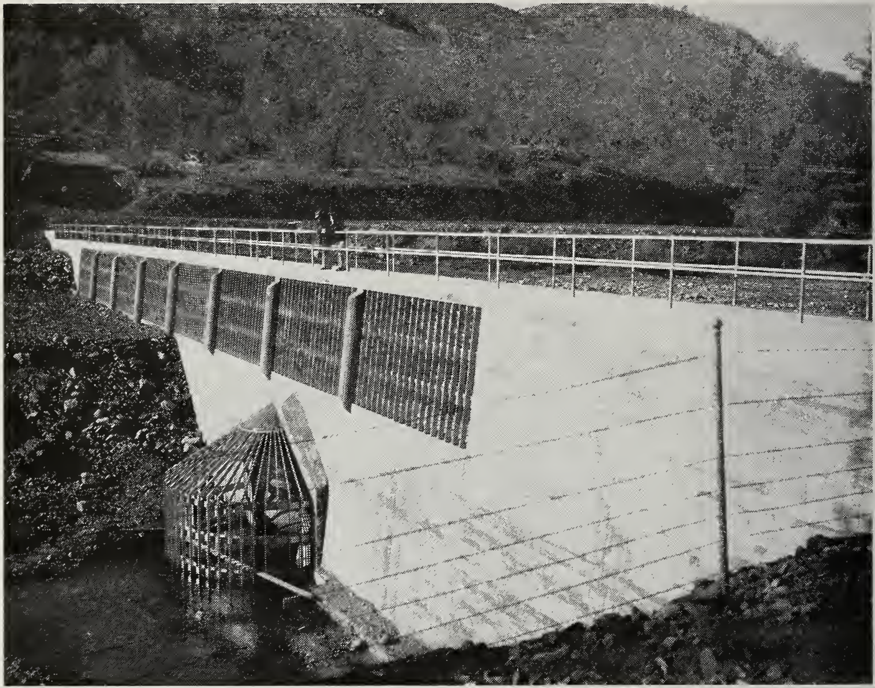
Moccasin Reservoir was drained once to inspect and clean the gates in the two outlet towers and to inspect the bypass conduit. On another occasion the weeds were burned and the reservoir cleaned. Some silt from the bottom was hauled away for gardening use.

Buildings of the old tunnel camp at Moccasin Portal were sold after stripping and salvaging material, and the site was cleaned. Fencing was placed along the easterly side of Moccasin Creek at the south end of the village. The bath house at the swimming pool was completed. The Grizzly Gulch canal was cleaned and a new concrete deck was placed on the culvert under the road at the entrance to the City property. Foundations were placed for a 2-stall garage, a fuel oil tank, and a chlorinating plant for treatment of the village water supply.

All work in and around Moccasin Power House and appurtenant structures is described in the report of the Power Operation Department.

Main Aqueduct, Foothill Division:

This division extends from the outlet of Moccasin Re-regulating Reservoir to Oakdale Portal, a total distance of 16.3 miles. It consists of two tunnels, 5.28 and 10.57 miles in length, connected by the Red Mountain Bar Pipe Line 0.45 miles long, at the crossing of the Tuolumne River Canyon and Don Pedro Reservoir.



MOCCASIN DIVERSION DAM
This newly constructed dam diverts stream water from Moccasin Creek beneath Moccasin re-regulating reservoir to prevent possible contamination of Hetch Hetchy water supply.

The usual maintenance work was done on this division. The cableway at Red Mountain Bar, which is used very infrequently, was overhauled and prepared for service. Roads to Brown Adit and from Hetch Hetchy Junction to Oakdale Portal were improved. In July, 1936, an electrical storm caused 14 grass and brush fires between Moccasin and Oakdale Portal, which were extinguished with difficulty.

The extreme cold of the winter of 1936-37 split many pipes which were used to supply water to property owners who claim that their springs were dried by the tunnel construction. Such pipes were repaired and in some cases new water tanks were installed.

Under the direction of the Water Department an experimental lime injection plant was installed at the old shaft at Hetch Hetchy Junction. Subsequently a small, automatic plant was put in service to supply a fixed amount of lime to the water.

At Oakdale Portal, during a period when but a small amount of water was being transmitted through the aqueduct, cement grout was forced into the slate near the portal to prevent leakage of water through the rocks when maximum delivery of water was being made.

Main Aqueduct, San Joaquin Division:

This division extends across the San Joaquin Valley from Oakdale Portal to Tesla Portal, a distance of 47½ miles. While usually referred to as a 5-ft. pipe line, it comprises diameters of 56, 58, 62, 66, and 72 inches. This pipe with present capacity of 70 m.g.d., is the limiting factor in the amount of water that may be transmitted to San Francisco from Hetch Hetchy at the present stage of construction.

The usual maintenance work was done during the year. Valve houses were cleaned, exposed pipe was painted, sand blow-off valves were operated and serviced, and in some cases extensions were placed on the valve stems.

During the flood stage of the San Joaquin River, the high level of the ground water made it necessary to pump out the water standing around the valve house at Elliott Cut.

Extensive maintenance was done on the road paralleling the pipe line for about two miles from Oakdale Portal westerly. This work included grading, setting piers for bridges, and installing culverts. The telephone line was extended westerly from Oakdale Portal to the Knights Ferry Road.

In November, 1936, the inside lining of about 700 ft. of the Red Mountain Bar Pipe Line was inspected and found in excellent condition.

Main Aqueduct, Coast Range Division:

This division consists of a 25.1 mile tunnel extending from Tesla Portal to Alameda East Portal, a 69-inch diameter concrete pipe (with 72-inch steel pipe connections to 10½-ft. steel pipes projecting from the tunnel linings) 0.6 mi. in length across the Sunol Valley, and a 3.4 mile tunnel to Irvington Portal.

In October, 1936, the tunnels were inspected. A very small amount of sand and small rock noted at some places on the floor, apparently had been stuck to the floor at the time of final cleanup and subsequently had leached free to appear as a deposit on the floor. The general condition of the side walls and roof was found excellent, with no signs of checking or spalling. The amount of ground water entering the tunnel is less than on previous inspections.

At Alameda East Portal a small, removable concrete bulkhead was built in the lower portion of the 72-inch pipe at its point of connection with the 10½-ft. pipe outlet from the tunnel, to prevent solid particles that might roll along the tunnel floor from being carried on through the aqueduct. A blow-off at this point provides a ready means of disposing of any deposit.

A portable gasoline driven, double drum hoist has been ordered for use at the Coast Range shafts. It will be used first in a general cleanup in each shaft and in the working chambers at the bottom of each, and to remove pipes and other fittings remaining from the construction days, and afterward will be available for general maintenance work.

At Tesla Portal a plant is being built to chlorinate or otherwise treat the water as it enters the tunnel. Contract HH-163 for this work was let by Public Utilities Commission in February, 1937, to L. Ubels for the estimated amount of $29,077.50. A contract for the chlorine and ammonia equipment was let to Wallace and Tiernan for $11,980. The plant has a capacity of 2,000 lbs. of chlorine and 400 lbs. of ammonia daily. There are two chlorinators, each of 1,000-lb. capacity and two ammoniators. The tank room has capacity for 15 chlorine and 6 ammonia cylinders, which will be handled by a 3-ton traveling crane.

The general contract includes construction of a chlorinator building, a keeper's house, a garage, and a pump house, and furnishing and installing 25,000 lbs. of pipe and fittings, two pumping units each of 100 gallons per minute capacity, and two steel water tanks, each of 20,000 gallons capacity.

Work on this contract is now 82% complete. The work is supervised by L. L. Wheeler, construction engineer.

Main Aqueduct, Bay Crossing Division:

This division extends from Irvington Portal, the west end of the Coast Range Tunnel, in Alameda County, to Redwood Portal, the inlet to Pulgas Tunnel, in San Mateo County, a total distance of 21.24 miles. It consists in general of two parallel pipe lines, nominally 5 ft. and 5½ ft. in diameter. Across the navigable channel of San Francisco Bay at Dumbarton Strait, for a distance of 0.6 miles, there are two 54-inch pipes and one 42-inch.

The combined capacity of the two pipe lines is about 110 m.g.d. During the year these pipes have been used largely to transmit water from Calaveras Reservoir, as well as from Hetch Hetchy.

Main Aqueduct, Peninsular Division:

This division includes the Pulgas Tunnel, 10¼ feet in diameter, and the outfall canal into Crystal Springs Reservoir, a total length of 1.89 miles. No maintenance has been necessary. The Water Department has undertaken a program of landscaping and other improvements along the canal, which are described in the report of that department.

Construction for the Water Department:

The Hetch Hetchy Department has completed the supervision of construction of one project for the Water Department and a second one is under way, to be completed in the fall. The first work was Contract 79, S.F.W.D. Last year's report noted the letting of contract to Youdall Construction Company on February 10, 1936, for the estimated amount of $1,315,280. A change of plan for a portion of the line to use 60-inch steel pipe instead of steel cylinder reinforced concrete pipe reduced the estimated amount of bid to $1,303,624.50 for about 10½ miles of pipe.

Last year's report noted that 9,270 feet of trench had been excavated from Brisbane to Visitacion Avenue and that 8,359 feet of pipe had been laid. Work was then started south from Brisbane and from Baden, paralleling El Camino Real, toward Aqua. Subsequently the trenching machine worked northerly from Baden to Palm Avenue in South San Francisco.

So far as possible the pipe was laid in 60-ft. sections. Field seams were welded with 400-amp. Lincoln arc welders. The protective coating consists of bituminous enamel inside and out, with an average thickness of $\frac{3}{32}''$. Generally there is additional protection of spirally wrapped, unbonded felt. At some points where ground water conditions were bad, the felt was omitted and a ¾″ covering of gunite was applied externally. On trestles the felt wrapping was omitted.

The 1,700-ft. pile trestle at Brisbane consists of 3-pile bents at 16-ft. centers. Where cut-off was below mud line, untreated piles were used, otherwise, creosoted piles. Pipe on trestle was covered with 1-inch redwood boards extending down to the stringers. An expansion joint was installed in the pipe line on the trestle.

Near University Mound Reservoir, a Venturi meter was installed. A previously existing frame building was reinforced, stuccoed and tile-roofed to house the recording mechanism of the meter.

Three underpasses, two of concrete and one of 106-inch diameter corrugated pipe, were constructed under the tracks of the Southern Pacific Company and the Market Street Railway Company at Baden.

All work under the contract was completed on May 11, 1937, for a total cost of $1,274,315.31.

The southerly end of this pipe line connects to 3.2 miles of 54-inch wrought iron pipe which extends through Millbrae to Burlingame. From this 54-inch line, a new 60-inch steel pipe 4¾ miles long is now being constructed in San Mateo Creek Canyon to the outlet tower at Crystal Springs Dam. The work is being done under Contract WD-112. Alternative bids were invited for 60-inch diameter steel pipe and 57-inch diameter steel cylinder reinforced concrete pipe, but no bids were submitted for the latter.

Four bids were received on December 9, 1936, by Public Utilities Commission. These ranged from $644,185.95 to $708,865.00. Contract was awarded on December 21, 1936, to the lowest bidder, Williams Bros. & Haas, Inc. The principal items of the contract are:

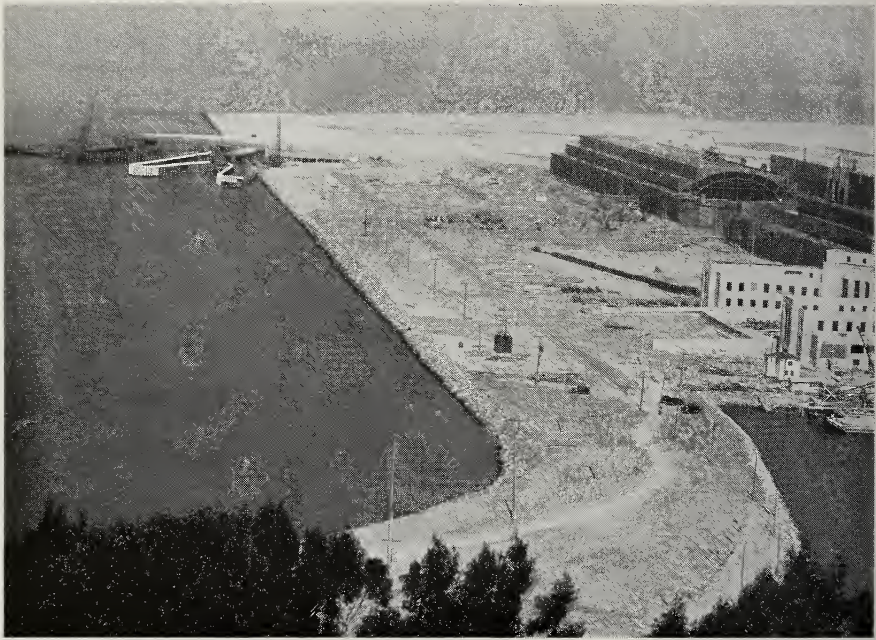
Furnishing and laying 24,620 ft. of 60 x ⅜″ welded steel pipe	$340,740.80
Furnishing and laying 660 ft. of 78 x ½″ welded steel pipe in tunnel	17,179.80
Furnishing and installing 530 beveled courses	18,550.00
Applying bituminous coating and lining 828,000 sq. ft.	66,240.00
Felt wrapping, 397,000 sq. ft.	15,880.00
Class 1 excavation up to 12 ft. depth—24,000 cu. yd.	36,000.00
Class 2 excavation—37,000 cu. yd.	25,900.00
Repavement—65,000 sq. ft.	16,250.00

The pipe line begins in the outlet tower at Crystal Springs Dam, where 660 feet of 78 x ½″ pipe are laid in tunnel. From the tunnel the pipe is 60″ diameter. In the vicinity of the Crystal Springs Pumping Plant the contractor will install 345 feet of 48 x ⅜″ pipe.

From the outlet tunnel the line follows down San Mateo Creek for 1400 feet through the property of the Water Department to Crystal Springs Road (A State road) and thence along the road for 3,000 feet. From this point for 11,000 feet the pipe is laid in a bench along the banks of the creek and for 9,200 feet in the streets of Hillsborough, San Mateo, and Burlingame.

Trenching began on March 4, 1937, on the bench along the creek, working up toward the dam. Pipe laying began on April 7. At the end of the fiscal year, with the exception of the two crossings of San Mateo Creek where the pipe is to be supported on concrete piers, the line had been laid and tested from the lower crossing of the creek to the outlet tunnel, a total of 15,134 feet. The 48-inch pipe at the pump house, including 8 large valves and a Venturi section is complete. In the outlet tower a 60-inch standpipe has been installed, and 582 feet of 78-inch pipe has been laid in the tunnel. The work is 55% complete.

Pipe line construction in San Mateo County is directly supervised by L. A. McAtee, construction engineer.



"TREASURE ISLAND" EXPOSITION CONSTRUCTION
General view from Yerba Buena Island showing ferry slips, exposition palaces and administration building under construction for Golden Gate International Exposition in 1939.

Construction for the Golden Gate Exposition:

As was noted in last year's report, the Bureau of Engineering of the Public Utilities Commission is supervising the construction of a number of buildings and other structures for the Exposition Company on "Treasure Island," which was built up by hydraulic fill on the shoals north of Yerba Buena Island. This area will be used for a municipal airport upon expiration of the lease which the Exposition Company now holds. Some of the present work is being done with the aid of PWA grants and some of it as WPA projects. In both cases the Company assumes the financial obligations, the City serving as sponsor on both PWA and WPA sections of the work.

Contract 1, for construction of an Administration Building on a school lot at Bush and Stockton Streets, which was noted in last year's report as rapidly nearing completion, was occupied by the Company in August, 1936. The total amount of the contract was $162,513. Upon completion of the exposition this building will revert to the School Department.

Contract 2, for constructing passenger and freight ferry slips at the island, was awarded by Public Utilities Commission on May 11, 1936, to Healy-Tibbitts Construction Company, the lowest bidder, for the estimated amount of $331,600. There were five bids, the highest being $397,485. The original time of completion of the contract was set at December 19, 1936, but delay in delivery of material, due to various strikes and other causes, has now set the date of completion as October 31, 1937. The work is now 68% complete.

Contract 3 for furnishing and erecting hydraulic hoisting plants for ferry slips was advertised for proposals on May 20, 1936, but the bids were rejected as being excessive. On February 11, 1937, proposals were again received by the Public Utilities Commission and on March 1 the contract was awarded to Healy-Tibbitts Construction Company for $49,926. Date of completion is set at October 14, 1937.

Contract 4 for covering untreated piles was awarded by the Public Utilities Commission on May 11, 1936, to Malott & Peterson, as a result of bids submitted on April 29, for the sum of $25,371.50. The original date of completion October 22, 1936 was extended 90 days to January 20, 1937 and eventually to June 19, 1937. Total payment under the contract was $27,586.

Contract 5 for structural steel castings and accessories for ferry slips was advertised by the Purchaser of Supplies for July 6, 1936, but the proposals were unsatisfactory and all bids were rejected.

The Purchaser again received bids on March 8, 1937 and awarded the contract to the lowest bidder, Minneapolis Moline Power Implement Company, for $38,500. The fabrication is now going ahead.

Contract 6 for constructing two hangar buildings was awarded on June 29, 1936 to MacDonald & Kahn Co., Ltd., for $736,000. On June 24, three bids had been received, ranging from $736,000 to $764,368. The original time of completion December 14, 1936 was extended to April 12, 1937 and finally to September 1. At the end of the fiscal year the work was 97% complete. These buildings will remain as part of the future airport.

Contract 7 is for constructing the air terminal building, which will remain as part of the future airport. Proposals were received on July 22, 1936 by the Public Utilities Commission and contract was awarded on July 27 to Clinton Construction Company for $677,000. One other bid of $695,564 had been received. Time of completion, originally set for December 15, 1936, was extended to March 11, 1937, to June 22 and finally to September 30, 1937. As of June 30, 1937 the work is 49% complete.

Contract 8 is for constructing the exposition palaces. On December 16, 1936, the Public Utilities Commission received three proposals for this work, ranging from $1,181,544 to $1,363,361, and on December 28, 1936 awarded the contract to the lowest bidder, Guy F. Atkinson Company. The time of completion originally set at April 15, 1937 was extended to September 15, 1937. As of June 30, 1937 this contract was 25% complete.

Contract 9 is for constructing the ferry terminal building. Proposals were received on February 11, 1937 and on March 1, the contract was awarded to Clinton Construction Company, the lowest bidder of six, for $115,600. The time of completion, originally set at April 15, 1937, was extended to June 18, August 21 and finally October 2, 1937. As of June 30, 1937, this contract was 50% complete.

Contract 14 is for constructing the central tower building. Bids were to have been received by the Public Utilities Commission on April 27, 1937, but changes were made in the specifications and proposals were received on May 14, 1937. There were four bids, ranging from $276,953 to $319,500 and on May 24, 1937, contract was awarded to Guy F. Atkinson, the low bidder. At the end of the fiscal year work had just begun on this contract.

NEW HANGARS
These two hangars under construction on Yerba Buena Shoals will form part of a future airport after being used as exposition buildings in 1939.

Contract 15 for structural steel for the central tower building was advertised for April 15, 1937 at which time four proposals were submitted but as they were considered excessive, all bids were rejected. Subsequently the work contemplated in this contract was incorporated into Contract 14.

Contract 16 is for constructing the pavilions of the central court. Proposals were invited by the Public Utilities Commission on May 21, 1937, and on June 4 contract was awarded to Clinton Construction Company, lowest bidder of four, for $214,800. Although the Controller has not yet certified the contract, the contractor is preparing to begin operations.

Contract 17 is for constructing the south towers. On June 23, 1937, Public Utilities Commission received four proposals for this work, ranging from $75,660 to $95,885, and on July 12, 1937, awarded the contract to E. T. Lesure, the lowest bidder.

Contract 18 is for piling of main entrance, east courts and east towers and will be advertised very early in the new fiscal year. This probably will be the last exposition contract to be supervised by the Bureau of Engineering.

J. H. Harwood, construction engineer, has direct supervision over all of these activities on Yerba Buena Shoals.

Construction for the San Francisco Airport:

Construction at the airport has gone forward steadily throughout the year. A detailed account of the work done by and under the supervision of the Bureau of Engineering will be found in the report of San Francisco Airport, but a few of the more important items are noted here.

Contract 38 for constructing an administration building was noted in last year's report. The contract was let by Public Utilities Commission on May 25, 1936, to Reed & Reed for $141,799. Work under the contract was completed on May 30, 1937. The total value of the work was $152,956.36.

Contract 39 for constructing earth and rock fill was awarded to T. O'Brien on March 1, 1937 for $61,600 as a result of bids received on February 17. Under this contract, rock and earth were hauled from a quarry at South San Francisco and dumped in the northeasterly part of the airport area as part of the plan to make a seaplane harbor. The amount of material to be moved, originally estimated at 160,000 cu. yds., was reduced to 100,000 cu. yds. At the end of the fiscal year the contractor had moved 85,172 cu. yds.

Contract 40 for a field lighting control board was advertised for April 15, 1937, when two bids were received. Contract was awarded to Lynn and Heffernan for $2,095.00. At the end of the fiscal year the work is practically complete. The contract provides a desk-type control board in the control room of the new administration building.

WPA work at the airport was supervised by this department. Extensive improvements to the grounds were accomplished under WPA docket 1727 on which work began in 1936. Another project, 6683, began in 1937 and shortly will be discontinued.

Construction at the Airport is supervised by A. J. Wehner, construction engineer.

Hetch Hetchy Water Supply Current Contract Data 1936-1937

H.H. No.	Title	Contractor	Date of Start	Time Days	Date Accepted	Bid	Payment to June 30, 1937	Bonds Fund
149	Enlargement of O'S. Dam	Transbay Const. Co.	5-14-35	966	. .	$3,219,965.00	$2,782,421.89	1933
156	Moccasin Diversion Works	MacDonald & Kahn Co., Inc.	12-19-35	270	8-31-36	213,968.00	200,798.99	1932
158	Grading and Street Work, Moccasin South Cottages	H. H. P. D.	6- 3-36	60	8-30-36	4,688.56	4,729.46	Power Op.
159	Early Intake Camp Bldgs.	H. H. W. S.	8- 1-36		10-31-36	8,454.86	8,492.49	Power Dept.
160	Drainage System Moccasin Diversion Works	W. J. Tobin	9-21-36	85	11-30-36	15,078.32	14,327.70	1932
161	C.I. Pier Plates, C.I. Pipe and Other Mtl. Appurt. to Spillway of O'S. Dam	Enterprise Foundry	10-20-36	50	12-12-36	3,426.81	3,426.81	1933
162	Steel Pier Plates for Spillway at O'S. Dam	Boiler Tank & Pipe	10-31-36	30	12-29-36	2,636.80	2,636.80	1933
163	Tesla Portal Chlor. Plant	L. Ubels	2- 5-37	180	. .	29,077.50	25,325.30	1932
164	F&D Outlet Valves for O'S. Dam	Joshua Hendy Iron Works and Pelton Water Wheel Co.	12-24-36 12-24-36	210 210	6-10-37 . .	6,787.70 25,062.99	6,787.70 None	1933 1933
165	F&D 72" Steel Pl. Conduit Lines for O'S. Dam	Berkeley Steel Const. Co.	1- 6-37	40	2-15-37	3,589.55	3,589.55	1933
166	F&I Chl. and Amm. Eqpt. for the Tesla Portal Chlor. Plant	Wallace & Tiernan	3-12-37	100	. .	11,980.00	5,990.00	1932
167	Livermore Warehouse	Empire Const. Co.	5- 1-37	100	6-21-37	5,380.00	5,380.00	1932
168	Chl. Eqpt. for Moccasin	Wallace & Tiernan	5- 1-37		6-20-37	1,573.84	1,573.84	HHWS Op.

C.I.—Cast Iron
F&I—Furnish and Install
F&D—Furnish and Deliver
Amm.—Ammonia

June 30, 1937

ASSETS

Fixed Capital:			
In Service		$77,025,809.46	
Under Construction (Aqueduct)		2,625.07	
Under Construction (H. H. Dam)		3,387,012.98	
P.W.A. Moccasin Diversion Works		242,388.69	$80,657,836.20
Cash:			
On Deposit with Treasurer:			
Operating Fund		12,248.89	
Bond Funds		1,373,038.60	
Bond Interest Funds		1,538,881.34	
Bond Redemption Funds		1,010,000.00	
P.W.A. Moccasin Diversion Works Fund		32,483.13	
		3,966,651.96	
Other Cash:			
Revolving Fund	$5,000.00		
Unclaimed Pay Checks	880.93	5,880.93	3,972,532.89
Accounts Receivable:			
Federal Grants—Unbilled		267,643.00	
Accounts Receivable		20,764.99	
Federal Grants—Billed		128,296.39	
		416,704.38	
Less Reserve for Doubtful Accounts		18,524.46	398,179.92
Interfund Accounts—Public Service Enterprises:			
San Francisco Water Department		23,954.04	
Hetch Hetchy Power Division		22,347.64	46,301.68
Interfund Accounts—General City and County:			
Public Utilities Commission		807.53	
Public Utilities Improvement Fund		415.74	
Recreation Department		150.00	
W.P.A. Projects Fund		1,321.85	2,695.12
Deferred Charges:			
Prepaid Expenses—Prepaid Rent		10,000.00	
Suspense Debits		31.30	
Prepaid Construction Advance for P.W.A. Moccasin Diversion Works		187,550.00	
Work in Progress—Accounts Receivable and Interfund		2,447.07	
Work in Progress—Depreciation Replacements—H. H. W. S.		2,236.72	
Work in Progress—Depreciation Replacements—H. H. P. D.		6,105.06	
Operation of Cook House—Early Intake		19.31	
Airport Engineering Expenditures		15,636.57	
Uncompleted Contracts, Purchase Orders and Other Commitments—H. H. W. S.		5,645.66	
Uncompleted Contracts, Purchase Orders and Other Commitments—Bond Fund		532,397.95	762,069.64
			$85,839,615.45

LIABILITIES

Bonded Debt:		
Matured, Unpaid	$ 1,010,000.00	
Unmatured	54,649,200.00	$55,659,200.00
Bond Interest Payable:		
Matured, Unpaid	1,536,631.25	
Accrued, Not Due	38,479.37	1,575,110.62
Accounts Payable:		
General Creditors	9,216.12	
Warrants Outstanding	28,922.14	
Contract Payments Due	162,937.52	
Contract Retentions	277,891.25	
Other Accounts Payable	36,555.26	515,522.29
Interfund Accounts—Public Service Enterprises:		
San Francisco Water Department	1,813.12	
Hetch Hetchy Power Division (H.H.W.S.)	15,059.80	
Hetch Hetchy Power Division (H.H.Dam)	141,696.52	158,569.44
Interfund Acounts—General City and County:		
Employees' Retirement System	1,398.65	
Department of Public Works	27.61	
Public Utilities Commission	5,576.12	
General Fund	4,590.20	11,592.58
Deferred Credits:		
Unamortized Bond Premium	197,338.75	
Advances Received from Utilities (PWA Mocc.)	187,550.00	
Reserve for Compensation Insurance	3,389.73	
Reserve for Vacations	5,867.14	
Suspense Credits	2.55	
Contracts, Purchase Orders and Other Commitments—H. H. W. S.	5,645.66	
Contracts, Purchase Orders and Other Commitments—Bond Fund	532,397.95	932,191.78
Total Liabilities		58,852,186.71
Surplus (See Surplus Account)		26,987,428.74
		$85,839,615.45

HETCH HETCHY WATER SUPPLY
COMPARATIVE OPERATING STATEMENT

	July 1, 1936 to June 30, 1937	July 1, 1935 to June 30, 1936
Operating Expenses:		
Plant Operating:		
6000 Salaries and Wages	$ 19,896.27	$ 19,689.12
6010 Contributions to Retirement System	953.90	600.96
6020 Compensation Insurance	......	113.19
6030 Traveling	68.66	214.12
6050 Operating Supplies	1,041.47	1,952.07
6090 Miscellaneous	163.42	51.04
6095 Production Rents	2,090.00	2,090.00
	24,213.72	24,710.50
Repairs and Maintenance:		
7000 Buildings and Structures (Water)	1,511.28	1,514.95
7002 Buildings and Structures (Joint)	3,078.03	......
7010 Reservoirs, Dams and Intakes	407.00	775.22
7015 Waterways	302.70	......
7020 Pipelines	3,859.31	2,581.15
7030 Miscellaneous Equipment (Joint)	1,003.86	2,666.04
7035 Aqueduct Tunnels	2,885.77	......
7040 Roads & Trails (Lake Eleanor to Moccasin)	6,523.89	5,097.53
7041 Roads & Trails (Moccasin to Tesla Portal)	879.57	......
7042 Roads & Trails (Tesla to Irvington Portal)	1,524.26	......
7050 Automotive Transp. Equip. (Water)	859.58	752.08
7051 Automotive Transp. Equip. (Joint)	2,257.43	......
7090 Miscellaneous	3,602.53	889.10
7095 Hydrography	3,924.05	3,582.18
	32,619.26	17,858.25
Administrative and General:		
8000 Salaries and Wages	13,388.94	9,031.84
8005 Contributions to Retirement System	436.86	563.98
8010 Services of Other Departments	8,541.13	2,295.37
8015 Professional Services	1,825.00	950.00
8020 Stationery, Office Supplies and Postage	631.53	197.06
8025 Telephone and Telegraph	342.77	79.12
8030 Traveling	651.22	1,294.64
8035 Insurance	......	7.37
8040 Injuries and Damages	407.95	565.85
8051 Automobile Insurance Premiums	685.47	394.14
8055 Medical Attention	......	62.64
	26,910.87	15,442.01
Net Operating Expense	83,743.85	58,010.76

Non-Operating Revenues:		
5205 Rental Income—Miscellaneous	2,704.09	2,600.75
5210 Interest Earned on Bank Deposits	22.51	......
5220 Interest Earned on Treasurer's Balances	2,280.54	3,052.21
	5,007.14	5,652.96
	78,736.71	52,357.80
Non-Operating Expense:		
9000 Bond Interest	2,440,488.99	2,458,229.34
9020 Taxes (Actually Paid)	1,542.31	1,453.07
9050 Depreciation Expense	5,617.35	......
	2,447,648.65	2,459,682.41
Net Loss Transferred to Surplus	$2,526,385.36	$2,512,040.21

HETCH HETCHY WATER SUPPLY
SURPLUS ACCOUNT
June 30, 1937

	Contributed	Earned	Total
Balance July 1, 1936	$27,526,561.15	*$2,010,027.34*	$25,516,533.81
Contribution from H. H. P. Divs.	1,059,087.05		1,059,087.05
Contribution from S. F. W. D.	552,102.05		552,102.05
General Fund	1,687,787.71		1,687,787.71
Federal Grants	700,472.40		700,472.40
Refund of Audit Expense		6.62	6.62
Proceeds from Sale of Old Bldgs. at Moccasin Portal Camp		105.00	105.00
	31,526,010.36	*2,009,915.72*	29,516,094.64
Deductions:			
Interest on Treasurer's Balances	2,280.54		2,280.54
Operating Loss July 1, 1936 to June 30, 1937		2,526,385.36	2,526,385.36
	2,280.54	2,526,385.36	2,528,665.90
	$31,523,729.82	*$4,536,301.08*	$26,987,428.74

Italics denote loss or deficiency.

HETCH HETCHY WATER SUPPLY

June 30, 1937

1000 FIXED CAPITAL IN SERVICE

		Debit	Credit
	Miscellaneous		
500	Rental from Lands and Rights of Way	....	$ 46,865.43
501	Sale of Water to Irrigation Districts	....	82,489.59
503	Revenues during Construction	....	9,520.88
503-P	Miscellaneous Credits apportioned to Power Development	$ 11,325.18	
504	Rental of Bay Development Properties	....	2,779,155.35
701	Bond Interest since October 31, 1934	1,221,698.32	
704	Interest earned on inactive balances—since October 31, 1934	....	6,683.06
705	Miscellaneous Interest Credits since October 31, 1934	....	31,484.38
711	Bond Interest during Construction to October 31, 1934	8,366,752.10	
712	Amortization of Bond Debt Expense	728.73	
713	Amortization of Premium on Debt	....	200.00
714	Interest earned on Inactive Balances to October 31, 1934	....	676,863.21
715	Miscellaneous Interest Credits to October 31, 1934	....	174,280.63
802	Lands and Rights of Way	632.19	
804	Legal Expense	206,354.08	
817	Roads and Trails—Payment to U. S. Government	1,250,000.00	
818	Roads and Trails—Construction in Yosemite National Park	206,170.95	
820	Miscellaneous Const. Expenditures	19,813.08	
822	Hetch Hetchy Division	98.78	
823	Lake Eleanor Division	735.83	
825	Priest Division	804.49	
826	Moccasin Division	17,953.76	

2000 FIXED CAPITAL UNDER CONSTRUCTION

HETCH HETCHY AQUEDUCT

		Debit
	Miscellaneous	
503	Extension stems to blow-off valve San Joaquin Pipe Line	$ 283.95
504	Footbridge—San Joaquin Valve House	45.80
506	Bridge to auxiliary tower—Moccasin Reservoir	420.09
513	Stilling well—Lower Cherry	790.95
515	Awnings for new cottages—Moccasin	251.48
516	Finish storage space, etc., Moccasin Dormitory	360.46
519	Trash screen at Forebay Early Intake	411.77
520	Install and house chlorinating apparatus—Moccasin	60.57
		$ 2,625.07
	Hetch Hetchy Dam	
1	Preliminary Expense	$ 23,054.27
3	Construction Costs	2,865,139.25
4	Engineering Charges	110,213.44
5	Legal, Administrative and other Overhead	16,684.73
6	Interest during Construction	217,201.41
7–1	Miscellaneous Equipment	1,504.80
7–2	Miscellaneous Hetch Hetchy Railroad Repairs	141,688.49
7–3	Miscellaneous—Other	3,590.89
7–4	Miscellaneous—Consumable Materials and Supplies	7,935.70
		$3,387,012.98

		Dam and Conduit Debit	Drainage System Debit
	P. W. A. Moccasin Diversion Works		
140–1	Preliminary	......	$ 42.84
2	Legal and Administrative	$ 580.40	
3	Office Engineering	7,303.28	1,072.65

FIXED CAPITAL IN SERVICE (Continued)

	Foothill Division		
827–1	General	8,308,540.63	
827–2	Lands and Rights of Way	87,683.93	
827–3	Tuolumne River Crossing	219,900.01	
	San Joaquin Division		
833–1	General	4,557,188.19	
833–2	Lands and Rights of Way	28,386.93	
	Coast Range Division		
834–1	Tunnel (non-contract)	16,327,563.23	
834–2	Lands and Rights of Way	194,178.09	
834–3	Administration and Engineering	1,391,158.39	
834–4	Alameda Creek Siphon	104,861.95	
834–5	Tunnel (Contract 135)	4,776,598.62	
	Corral Hollow Pipe Line		
857–1	General	1,185,651.76	
857–2	Lands and Rights of Way	30,027.73	
	Bay Development		
860–1	General	156,725.96	
860–2	Lands and Rights of Way	4,597.16	
	1910 Construction Fund		
1000	Hetch Hetchy Railroad Investment	2,809,338.74	
1001	Hetch Hetchy Railroad—Net Revenue.		66,245.72
1500	Total Construction Costs to July 1, 1927	22,820,270.06	
1600	Construction Costs since June 30, 1927.	235,241.53	
1700	Interest during Construction since June 30, 1927	6,345,500.57	
	Equipment		
1045–00	General Office Equipment	152.13	
1045–03	General Transportation Equipment	5,233.99	
1045–04	General Construction Equipment	7,730.62	
		$80,899,597.71	$3,873,788.25
		—3,873,788.25	
		$77,025,809.46	

FIXED CAPITAL UNDER CONSTRUCTION (Continued)

4	Interest during Construction	9,766.82	295.29
8	Contracts	200,798.99	14,327.70
10	Testing Materials	52.64	
13	Force Account—Labor	22.20	
16	Force Account—Other	2.44	
18	Inspection and Supervision—Labor	5,243.51	841.67
19	Inspection and Supervision—Material	139.57	
20	Inspection and Supervision—Other	503.12	128.14
23	Field Engineering—Labor	1,151.96	
24	Field Engineering—Material	2.73	
25	Field Engineering—Other	112.74	
		$225,680.40	$16,708.29

MOCCASIN DIVERSION WORKS FUND (P. W. A. DOCKET 1130) STATEMENT OF EXPENDITURES AS OF JUNE 30, 1937

in Accordance With Account Classification

P. W. A. Moccasin Diversion Works Fund

Advanced by 1932 H. H. Construction fund; S. J. Valley—61	$187,550.00
Federal Grant—Requisition No. 1; May 8, 1937	85,250.00
	$272,800.00

	Project Under Construction	Dam and Conduit	Drainage System	
1	Preliminary		$ 42.84	
2	Legal and Administrative	$ 580.40		
3	Office Engineering	7,303.28	1,072.65	
4	Interest During Construction	9,766.82	295.29	
8	Contract Estimates	200,798.99	14,327.70	
10	Testing Materials	52.64		
13	Force Account—Labor	22.20		
16	Force Account—Other	2.44		
18	Inspection and Supervision—Labor	5,243.51	841.67	
19	Inspection and Supervision—Material	139.57		
20	Inspection and Supervision—Other	503.12	128.14	
23	Field Engineering—Labor	1,151.96		
24	Field Engineering—Material	2.73		
25	Field Engineering—Other	112.74		
		$225,680.40	$16,708.29	$242,388.69

UNEXPENDED BALANCE OF FUNDS		$ 30,411.31
TREASURER'S CASH BALANCE		$ 32,483.13
Less Accounts Payable		
229 1932 Hetch Hetchy Construction Fund	$1,986.39	
230 Controller	85.43	2,071.82
UNEXPENDED BALANCE OF FUNDS		$ 30,411.31

HETCH HETCHY CONSTRUCTION COSTS ALLOCATED TO WATER

As of June 30, 1937

Expenditures:			
Mountain Division		$19,837,212.93	
Moccasin Division		17,953.76	
Foothill Division		8,616,124.57	
San Joaquin Division		4,585,575.12	
Coast Range Division		22,794,360.28	
Corral Hollow Pipe Line		1,215,679.49	
Bay Development		6,124,353.90	
			$63,191,260.05
Roads and Trails—Yosemite National Park—			
Constructed		206,170.95	
Payments to U. S. Government		1,250,000.00	
			1,456,170.95
Miscellaneous Construction Expenditures		44,887.95	
Legal Expense		206,354.08	
Bond Interest	$15,760,199.09		
Less Interest earned	715,030.65		
		$15,045,168.44	
			15,296,409.71
Total Expenditures			$79,943,840.71
Credits:			
Rental of Land and Rights of Way		$ 46,865.43	
Sale of Water to Irrigation Districts		82,489.59	
Rental of Bay Development Properties		2,779,155.35	
Miscellaneous Revenues during Construction		9,520.88	
			$ 2,918,031.25
Fixed Capital in Service June 30, 1937			$77,025,809.46

HETCH HETCHY WATER SUPPLY

DETAIL OF FUNDS, BONDED DEBT AND WARRANTS OUTSTANDING

June 30, 1937

	Operating Fund	Bond Funds	P. W. A. Moccasin Diversion Works	Bond Interest Funds	Bond Redemption Funds	Bonded Debt Matured Unpaid	Bonded Debt Unmatured	Bond Interest Matured Unpaid	Bond Interest Accrued Not Due	Warrants Outstanding
1910—4½%	....	....	....	$ 647,932.50	$1,010,000.00	$1,010,000.00	$13,174,200.00	$ 647,932.50	....	....
1925—5%	....	....	....	203,875.00	....	....	8,000,000.00	203,875.00	....	....
1928—4½%	....	$ 584.06	....	553,095.00	....	....	24,000,000.00	553,095.00	....	$ 506.00
1932—5¾%	....	....	....	65,463.75	....	....	4,325,000.00	65,492.50	$20,723.96	....
1932—5%	....	....	....	9,925.00	....	....	1,234,000.00	9,925.00	5,141.67	....
1932—4½%	....	....	....	270.00	....	....	143,000.00	270.00	536.25	....
1932—4%	....	....	....	1,720.00	....	....	280,000.00	1,720.00	933.33	....
1932—3%	....	....	....	915.00	....	....	194,000.00	915.00	485.00	....
1932—2¾%	....	244,543.89	....	2,186.25	....	....	324,000.00	2,186.25	742.50	4,651.18
1933—4%	....	1,127,910.65	....	53,498.84	....	....	2,975,000.00	51,220.00	9,916.66	7,524.77
Hetch Hetchy Water Supply	$12,248.89	....	....	....	....	....	....	....	....	16,240.19
P. W. A. Moccasin Diversion Works Fund	....	....	$32,483.13	....	....	....	....	....	....	....
	$12,248.89	$1,373,038.60	$32,483.13	$1,538,881.34	$1,010,000.00	$1,010,000.00	$54,649,200.00	$1,536,631.25	$38,479.37	$28,922.14

Rate of Interest	Issue of 1909	1910	1925	1928	1932	1933	Total
2¾%					$ 324,000.00		$ 324,000.00
3 %					194,000.00		194,000.00
4 %					280,000.00	$3,500,000.00	3,780,000.00
4½%	$600,000.00	$45,000,000.00		$24,000,000.00	143,000.00		69,743,000.00
5 %			$10,000,000.00		1,234,000.00		11,234,000.00
5¾%					4,325,000.00		4,325,000.00
Total Issued	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$89,600,000.00
Bonds retired as of June 30, 1937	600,000.00	17,000,000.00	2,000,000.00			525,000.00	20,125,000.00
Bonds outstanding as of June 30, 1937		$28,000,000.00	$8,000,000.00	$24,000,000.00	$6,500,000.00	$2,975,000.00	$69,475,000.00

Redemption Dates Annual Redemption Year	July 1	Jan. 1	July 1	June 1	December 1	Total Redemption	Total Interest	Total Interest and Redemption
1937-38	$ 1,000,000.00	$ 250,000.00	$ 600,000.00		$ 175,000.00	$ 2,025,000.00	$ 3,147,003.00	$ 5,172,003.00
1938-39	1,000,000.00	250,000.00	600,000.00	$ 200,000.00	175,000.00	2,225,000.00	3,054,572.00	5,279,572.00
1939-40	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,951,904.00	5,176,904.00
1940-41	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,849,253.00	5,074,253.00
1941-42	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,746,775.00	4,971,775.00
1942-43	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,644,298.00	4,869,298.00
1943-44	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,541,820.00	4,766,820.00
1944-45	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,439,343.00	4,664,343.00
1945-46	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,336,879.00	4,561,879.00
1946-47	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,234,561.00	4,459,561.00
1947-48	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,132,244.00	4,357,244.00
1948-49	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	2,029,926.00	4,254,926.00
1949-50	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	1,927,609.00	4,152,609.00
1950-51	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	1,825,291.00	4,050,291.00
1951-52	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	1,722,979.00	3,947,979.00
1952-53	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	1,620,726.00	3,845,726.00
1953-54	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00	1,518,474.00	3,743,474.00
1954-55	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	1,419,721.00	3,469,721.00
1955-56	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	1,324,469.00	3,374,469.00
1956-57	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	1,229,189.00	3,279,189.00
1957-58	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	1,133,964.00	3,183,964.00
1958-59	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	1,038,714.00	3,088,714.00
1959-60	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	943,464.00	2,993,464.00
1960-61	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	848,214.00	2,898,214.00
1961-62	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	752,964.00	2,802,964.00
1962-63	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	657,714.00	2,707,714.00
1963-64	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	562,507.00	2,612,507.00
1964-65	1,000,000.00	250,000.00	600,000.00	200,000.00		2,050,000.00	467,837.00	2,517,837.00
1965-66		250,000.00	600,000.00	200,000.00		1,050,000.00	418,855.00	1,468,855.00
1966-67		250,000.00	600,000.00	200,000.00		1,050,000.00	369,872.00	1,419,872.00
1967-68		250,000.00	600,000.00	200,000.00		1,050,000.00	320,890.00	1,370,890.00
1968-69		250,000.00	600,000.00	200,000.00		1,050,000.00	271,907.00	1,321,907.00
1969-70			600,000.00	200,000.00		800,000.00	229,175.00	1,029,175.00
1970-71			600,000.00	100,000.00		700,000.00	193,109.00	893,109.00
1971-72			600,000.00			600,000.00	162,000.00	762,000.00
1972-73			600,000.00			600,000.00	135,000.00	735,000.00
1973-74			600,000.00			600,000.00	108,000.00	708,000.00
1974-75			600,000.00			600,000.00	81,000.00	681,000.00
1975-76			600,000.00			600,000.00	54,000.00	654,000.00
1976-77			600,000.00			600,000.00	27,000.00	627,000.00
	$28,000,000.00	$8,000,000.00	$24,000,000.00	$6,500,000.00	$2,975,000.00	$69,475,000.00	$52,473,222.00	$121,948,222.00

HETCH HETCHY WATER SUPPLY

EXPENDITURES—FISCAL YEAR 1936-1937

Account	Description	Amount	Hetch Hetchy Power Proportion Per Cent	Hetch Hetchy Power Proportion Amount	San Francisco Water Dept. Proportion Per Cent	San Francisco Water Dept. Proportion Amount
	Plant Operating					
6000	Salaries and wages	$ 38,921.13	48.881	$ 19,024.86	51.119	$ 19,896.27
6010	Contributions to Retirement System	1,640.79	41.863	686.89	58.137	953.90
6030	Traveling	68.66	....	......	100.00	68.66
6050	Operating Supplies	1,041.47	....	......	100.00	1,041.47
6090	Miscellaneous	163.42	....	......	100.00	163.42
6095	Production Rents	20,000.00	90.00	18,000.00	10.00	2,000.00
		90.00	....	......	100.00	90.00
	Repairs and Maintenance					
7000	Buildings and structures (Water)	1,511.28	....	......	100.00	1,511.28
7001	Buildings and structures (Power)	4,358.09	100.00	4,358.09	....	......
7002	Buildings and structures (Joint)	15,440.04	80.00	12,362.01	20.00	3,078.03
7005	Forebays, Penstocks and Tailraces	487.71	100.00	487.71	....	......
7010	Reservoirs, Dams and Intakes	4,070.03	90.00	3,663.03	10.00	407.00
7015	Waterways	3,026.98	90.00	2,724.28	10.00	302.70
7020	Pipelines	3,859.31	....	......	100.00	3,859.31
7025	Hydraulic Powerplant equipment	1,308.48	100.00	1,308.48	....	......
7030	Miscellaneous Equipment (Joint)	2,007.67	50.00	1,003.81	50.00	1,003.86
7035	Aqueduct Tunnels	2,885.77	....	......	100.00	2,885.77
7040	Roads and Trails (Lake Eleanor to Moccasin)	13,048.83	50.00	6,524.94	50.00	6,523.89
7041	Roads and Trails (Moccasin to Tesla Portal)	1,759.19	50.00	879.62	50.00	879.57
7042	Roads and Trails (Tesla Portal to Irvington Portal)	1,524.26	....	......	100.00	1,524.26
7050	Automotive Transportation Equipment (Water)	859.58	....	......	100.00	859.58
7051	Automotive Transportation Equipment (Joint)	5,159.90	56.25	2,902.47	43.75	2,257.43
7090	Miscellaneous Repairs and Maintenance	7,215.04	50.00	3,612.51	50.00	3,602.53
7095	Hydrography	4,360.04	10.00	435.99	90.00	3,924.05
	Administrative and General					
8000	Salaries and wages	17,897.87	25.193	4,508.93	74.807	13,388.94
8005	Contributions to Retirement System	751.44	41.863	314.58	58.137	436.86
8010	Services of Other Departments	8,541.13	....	......	100.00	8,541.13
8015	Professional Services	1,825.00	....	......	100.00	1,825.00
8020	Stationery, Office Supplies and Postage	631.53	....	......	100.00	631.53
8025	Telephone and Telegraph	342.77	....	......	100.00	342.77
8030	Traveling	651.22	....	......	100.00	651.22
8040	Injuries and Damages	701.72	41.863	293.77	58.137	407.95
8051	Automobile Insurance Premiums	685.47	....	......	100.00	685.47
	Fixed Charges					
9020	Taxes (actually paid)	6,009.19	74.334	4,466.88	25.666	1,542.31

1000-1045-04	One-half ton chain blocks	56.74	50.00	28.37	50.00	28.37
1000-1045-04	Portable acetylene welding outfit	78.76	50.00	39.38	50.00	39.38
1000-1045-04	Portable road oil distributor	491.26	50.00	245.63	50.00	245.63
1000-1045-04	Drag line equipment for gasoline shovel	1,428.65	50.00	714.33	50.00	714.32
	Buildings, Structures and Improvements					
1000-823	Cattle guard across road, end of Cherry Canal	232.56	90.00	209.30	10.00	23.26
1000-823	Trails to gauging station, Early Intake	203.27	10.00	20.33	90.00	182.94
1000-823	Lower Cherry water gauge recorder	300.00	10.00	30.00	90.00	270.00
1000-826	Bridge to auxiliary tower Moccasin Reservoir	3,500.00	....	......	100.00	3,500.00
1000-826	Sewer line, Moccasin Reservoir Keeper's House	188.91	....	......	100.00	188.91
1000-826	Toilets, showers and dressing room, Moccasin Swimming Pool	935.75	50.00	467.88	50.00	467.87
1000-826	Apply wood sheathing, Moccasin machine shop interior	771.77	50.00	385.88	50.00	385.89
1000-826	Install linoleum, main floor, Moccasin Clubhouse	651.94	50.00	325.97	50.00	325.97
1000-827-1	Telephone line, Oakdale Meter House	393.91	....	......	100.00	393.91
1000-833-1	Extension stems to blow-off valve San Joaquin Pipeline	500.00	....	......	100.00	500.00
1000-833-1	Footbridge San Joaquin Valve House	250.00	....	......	100.00	250.00
1000-833-1	Six right-of-way-bridges, San Joaquin Valley	992.18	....	......	100.00	992.18
2000-501	Pressure gauge at Oakdale Portal	100.00	....	......	100.00	100.00
2000-505	Electric light unit, Lake Eleanor dam tender	900.00	50.00	450.00	50.00	450.00
2000-508	Meter rating station—Turlock-Modesto Irrigation District	950.00	10.00	95.00	90.00	855.00
2000-513	Stilling well, Lower Cherry gauging station	795.00	10.00	80.00	90.00	715.00
2000-515	Awnings for new cottages, Moccasin	300.00	50.00	150.00	50.00	150.00
2000-516	Finish storage space in basement, install awnings and grade work, Moccasin Dormitory	500.00	50.00	250.00	50.00	250.00
2000-519	Trash screen, Forebay Early Intake	7,000.00	100.00	7,000.00	....	......
2000-520	Chlorinator for camp water supply, Moccasin	2,500.00	50.00	1,250.00	50.00	1,250.00
	Current Depreciation Replacements					
1000-824	Pack guards, South Fork Pipe Crossing	791.59	90.00	712.43	10.00	79.16
1000-824	Bridge across Middle Fork near South Fork Pipe Crossing	394.79	90.00	355.32	10.00	39.47
1000-826	Water line to Moccasin Dam	947.43	....	......	100.00	947.43
1000-827-1	Foundation under two water tanks, Hetch Hetchy Junction	340.48	....	......	100.00	340.48
1000-827-1	Blow-off pipe, Brown Adit	209.06	....	......	100.00	209.06
1000-1045-3	Replace one ¾-ton express body automobile	634.00	....	......	100.00	634.00
1000-1045-3	Replace Packard automobile	3,610.00	10.00	361.00	90.00	3,249.00
3608-803	Water stops on radial gates, Early Intake Diversion Dam	750.00	90.00	675.00	10.00	75.00
3608-804	Walkway, Early Intake Diversion Dam Spillway	500.00	90.00	450.00	10.00	50.00
3608-808	Trestle, Early Intake Tramway	750.00	90.00	675.00	10.00	75.00
3608-809	Road trestle at Tunnel No. 5, Early Intake	970.00	90.00	873.00	10.00	97.00
		208,479.72		103,402.67		105,077.05
	Annual Appropriation Ordinance (1936-1937) Controller's Cash Transfer Voucher July, 1936, No. 1611	221,003.00		114,442.00		106,561.00
	Refund	$ 12,523.28		$ 11,039.33		$ 1,483.95

1933 HETCH HETCHY DAM BOND FUND, BOND INTEREST AND BOND REDEMPTION FUND
STATEMENT OF RECEIPTS, EXPENDITURES AND BALANCES AS OF JUNE 30, 1937

	Detail	Totals	Bond Fund	Bond Interest Fund	Bond Redemption Fund
Proceeds from Sale of Bonds:					
Par Value	$3,500,000.00				
Premium on Bonds	197,338.75	$3,697,338.75	$3,697,338.75		
Advances:					
From Taxes (5-31-35)	175,000.00	175,000.00			$175,000.00
Federal Grants Received:					
Grant Requisition No. 1 (6-11-36)	60,067.94				
Grant Requisition No. 2 (7-13-36)	49,624.31				
Grant Requisition No. 3 (11-20-36)	91,040.43				
Grant Requisition No. 4 (2-4-37)	122,084.46				
Grant Requisition No. 5 (3-31-37)	127,982.97				
Grant Requisition No. 6 (6-8-37)	36,627.19	487,427.30	487,427.30		
Interest Received:					
Accrued Interest on Bonds Sold:					
$ 175,000.00—6-1-34 to 11-30-34—4%	3,480.55				
$3,325,000.00—12-1-34 to 5-9-35—4%	58,372.22	61,852.77		$ 61,852.77	
Interest Earned on Bank Balances:					
1934—1 Quarter	307.42				
1935—4 Quarters	33,200.70				
1936—4 Quarters	15,142.67				
1937—2 Quarters	4,211.69	52,862.48		52,862.48	
Transfers:					
Interest During Construction			*217,201.41*	217,201.41	
Interest During Construction			*5,704.97*	*5,704.97*	
Bond Redemption			*350,000.00*		350,000.00
Total Receipts		$4,474,481.30	$3,623,269.61	$326,211.69	$525,000.00
Fixed Capital Under Construction:					
1 Preliminary	$ 23,054.27		$ 23,054.27		
3 Construction Costs	2,865,139.25		2,865,139.25		
4 Engineering Charges	110,213.44		110,213.44		
5 Legal, Administrative and Other Overhead	16,684.73		16,684.73		
6 Interest During Construction	217,201.41			$217,201.41	
7 Miscellaneous—1 Equipment	1,504.80		1,504.80		
—2 H. H. Railroad Repairs	141,688.49		141,688.49		
—3 Other	3,590.89		3,590.89		
—4 Material and Supplies	7,935.70		7,935.70		
		$3,387,012.98	$3,169,811.57	$217,201.41	

Bond Redemption, Matured		525,000.00			$525,000.00
Bond Interest Accrued	331,916.66				
Less Interest During Construction	217,201.41	114,715.25		114,715.25	
Total Expenditures		$4,026,728.23	$3,169,811.57	$331,916.66	$525,000.00
Unexpended Balances		447,753.07	453,458.04	*5,704.97*	....
Treasurer's Cash Balances		$1,181,409.49	$1,127,910.65	$ 53,498.84	....
Accounts Receivable:					
City Treasurer, Interest Earned		1,932.85		1,932.85	
		$1,183,342.34	$1,127,910.65	$ 55,431.69	
Less Accounts Payable:					
350 San Francisco Water Department		95.17	95.17		
355 Hetch Hetchy Power Depreciation Fund		141,696.52	141,696.52		
360 1932 Hetch Hetchy Construction Fund		82,217.20	82,217.20		
375 Hetch Hetchy Water Supply		70.31	70.31		
400 Employees' Retirement System		136.48	136.48		
410 Department of Public Works—Engineering		27.61	27.61		
415 Public Utilities Commission—Engineering		2,203.04	2,203.04		
420 General Fund		3,855.92	3,855.92		
420 General Fund—Controller		648.85	648.85		
510 Bond Interest Matured, Unpaid		51,220.00		51,220.00	
515 Bond Interest Accrued, Not Due**		9,916.66		9,916.66	
600 General Creditors		206.52	206.52		
601 Hetch Hetchy Water Supply Revolving Fund		83.31	83.31		
605 Warrants Outstanding		7,524.77	7,524.77		
610 Contract Payments Due		158,002.91	158,002.91		
615 Contract Retentions		275,358.72	275,358.72		
685 Reserve for Compensation Insurance		2,325.28	2,325.28		
		$ 735,589.27	$ 674,452.61	$ 61,136.66	
Unexpended Balances		$ 447,753.07	$ 453,458.04	$ *5,704.97*	

Italics denote loss or deficiency.

HETCH HETCHY WATER SUPPLY AND POWER PROJECT

CONSOLIDATED BALANCE SHEET

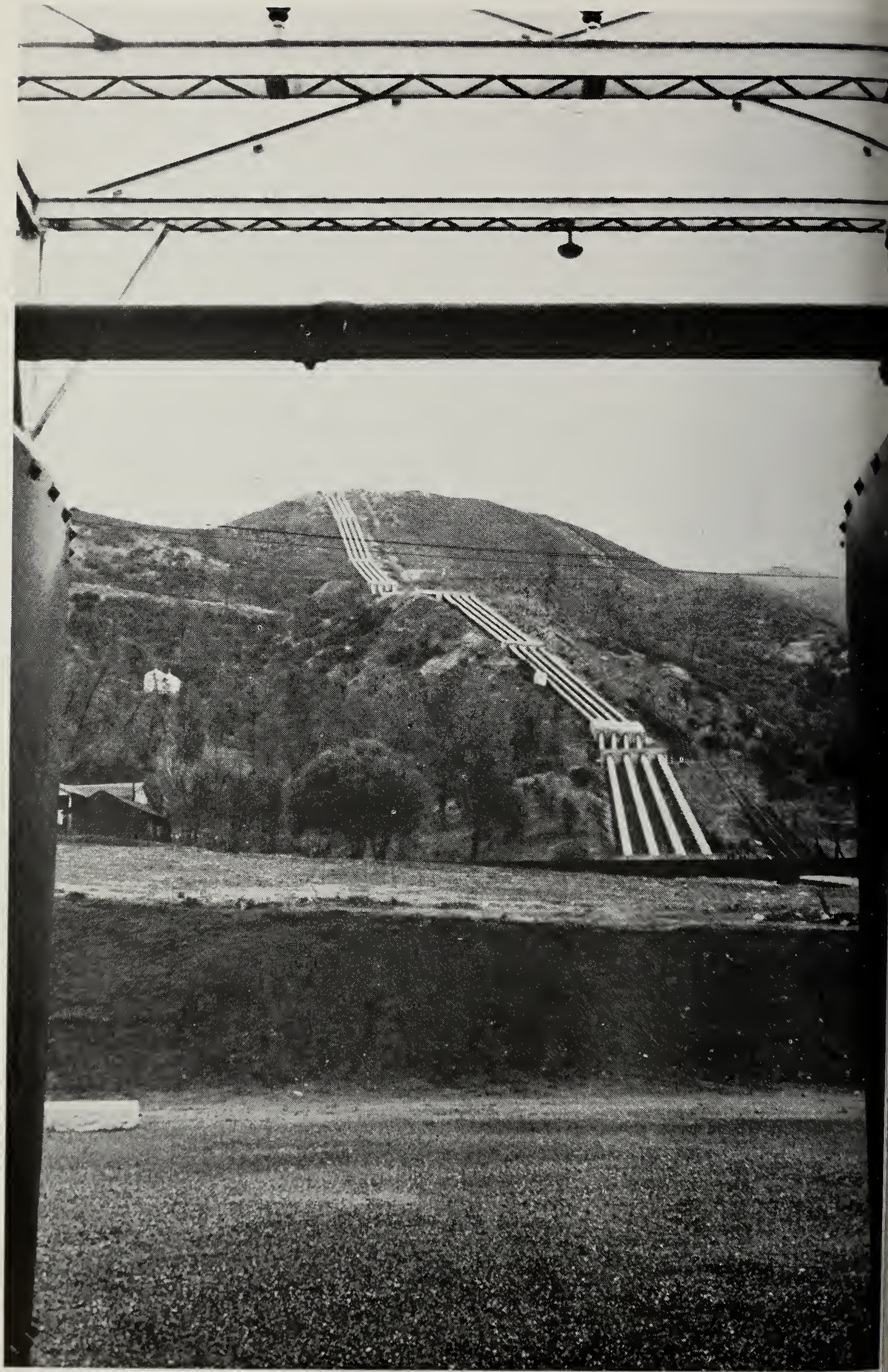
JUNE 30, 1937

ASSETS	Total	Water	Power
Properties:			
Fixed capital in service	$103,167,522.25	$77,025,809.46	$26,141,712.79
Fixed capital under const.	3,632,026.74	3,632,026.74	....
Total	106,799,548.99	80,657,836.20	26,141,712.79
Less reserve for depreciation	1,627,199.29	....	1,627,199.29
Remainder	105,172,349.70	80,657,836.20	24,514,513.50
Cash:			
On deposit with Treasurer	4,079,894.00	3,966,651.96	113,242.04
Other	9,399.94	5,880.93	3,519.01
Total Cash	4,089,293.94	3,972,532.89	116,761.05
Accounts Receivable	597,791.80	398,179.92	199,611.88
Inter and Intrafund Accounts:			
Due from other City Depts.	26,730.76	26,649.16	81.60
Intrafund (Contra)	179,103.96	22,347.64	156,756.32
Total Inter and Intrafund Accounts.	205,834.72	48,996.80	156,837.92
Deferred Charges:			
Property valuation expense.	392,006.43	....	392,006.43
Material and supplies	21,553.69	....	21,553.69
Work in progress	10,808.16	10,808.16	....
Prepaid rent	10,000.00	10,000.00	....
Suspense debits	14,165.20	31.30	14,133.90
Airport engineering expend.	15,766.85	15,636.57	130.28
Total deferred charges.	464,300.33	36,476.03	427,824.30
Total	$110,529,570.49	$85,114,021.84	$25,415,548.65

LIABILITIES	Total	Water	Power
Bonded Debt:			
Due July 1, 1937	$ 1,000,000.00	$ 1,000,000.00	....
Due Dec. 1, 1937 to July 1, 1977	68,475,000.00	54,649,200.00	$13,825,800.00
Matured bonds not presented for payment	10,000.00	10,000.00	....
Total bonded debt	69,485,000.00	55,659,200.00	13,825,800.00
Bond Interest:			
Matured, unpaid	1,536,631.25	1,536,631.25	....
Accrued, not due	38,479.37	38,479.37	....
Total bond interest	1,575,110.62	1,575,110.62	....
Accounts Payable:			
Warrants outstanding	34,836.39	28,922.14	5,914.25
General creditors	15,793.66	9,216.12	6,577.54
Contract payments due	162,937.52	162,937.52	....
Contract retentions	279,438.25	277,891.25	1,547.00
Other accounts payable	36,555.26	36,555.26	....
Total Accts. Payable	529,561.08	515,522.29	14,038.79
Inter and Intrafund Accounts:			
Due to other City Depts.	15,856.32	13,405.70	2,450.62
Intrafund (Contra)	179,103.96	156,756.32	22,347.64
Total Inter and Intrafund Accounts.	194,960.28	170,162.02	24,798.26
Deferred Credits:			
Unamortized Bond Premium	197,338.75	197,338.75	....
Suspense credits	16.79	2.55	14.24
Reserve for compensation insurance	3,389.73	3,389.73	....
Reserve for vacations	5,867.14	5,867.14	....
Total Deferred Credits	206,612.41	206,598.17	14.24
Surplus	38,538,326.10	26,987,428.74	11,550,897.36
Total	$110,529,570.49	$85,114,021.84	$25,415,548.65

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
SURPLUS ACCOUNT
FOR THE TWELVE MONTHS ENDED JUNE 30, 1937

	Water and Power			Water			Power		
	Total	Contributed	Earned	Total	Contributed	Earned	Total	Contributed	Earned
Balance June 30, 1936	$36,862,915.89	$29,230,593.64	$7,632,322.25	$25,516,533.81	$27,526,561.15	*$2,010,027.34*	$11,346,382.08	$1,704,032.49	$ 9,642,349.59
Additions:									
Contributions from taxes for Bond Interest and Bond Redemption	1,687,787.71	1,687,787.71	....	1,687,787.71	1,687,787.71	....	....	....	....
Contributions from Hetch Hetchy Power for Bond Interest and Bond Redemption	....	....	....	1,044,547.65	1,044,547.65	....	*1,044,547.65*	*1,044,547.65*	....
Contribution from Hetch Hetchy Power Depreciation Replacements, 1935-1936	....	....	....	*1,304.42*	*1,304.42*	....	1,304.42	1,304.42	....
Equipment, 1936-1937	....	....	....	1,027.71	1,027.71	....	*1,027.71*	*1,027.71*	....
Buildings, structures and improvements, 1936-1937	....	....	....	10,714.36	10,714.36	....	*10,714.36*	*10,714.36*	....
Current Depreciation Replacements, 1936-1937	....	....	....	4,101.75	4,101.75	....	*4,101.75*	*4,101.75*	....
Contributions from San Francisco Water Department for Bond Interest and Redemption	447,025.00	447,025.00	....	447,025.00	447,025.00	....	....	....	....
Contributions from San Francisco Water Department for operating expenses, equipment, buildings, structures and improvements and depreciation replacements, 1936-1937	105,077.05	105,077.05	....	105,077.05	105,077.05	....	....	....	....
Federal Grants for construction Hetch Hetchy Dam and Moccasin Diversion Works	700,472.40	700,472.40	....	700,472.40	700,472.40	....	....	....	....
Airport Engineering Expenditures	130.28	....	130.28	....	....	....	130.28	....	130.28
Refund of Audit expense	6.62	....	6.62	6.62	....	6.62	....	....	....
Net income from operations	1,268,833.32	....	1,268,833.32	....	....	....	1,268,833.32	....	1,268,833.32
Sale of old buildings, Moccasin Portal Camp	105.00	....	105.00	105.00	....	105.00	....	....	....
Total Additions	$41,072,353.27	$32,170,955.80	$8,901,397.47	$29,516,094.64	$31,526,010.36	*$2,009,915.72*	$11,556,258.63	$ 644,945.44	$10,911,313.19
Deductions:									
Interest earned on bank balances retained in General Fund	7,641.81	7,641.81	....	2,280.54	2,280.54	....	5,361.27	5,361.27	....
Net loss from operations	2,526,385.36	....	2,526,385.36	2,526,385.36	....	2,526,385.36	....	....	....
Total Deductions	$ 2,534,027.17	$ 7,641.81	$2,526,385.36	$ 2,528,665.90	$ 2,280.54	$2,526,385.36	$ 5,361.27	$ 5,361.27	....
Balance—June 30, 1937	$38,538,326.10	$32,163,313.99	$6,375,012.11	$26,987,428.74	$31,523,729.82	*$4,536,301.08*	$11,550,897.36	$ 639,584.17	$10,911,313.19



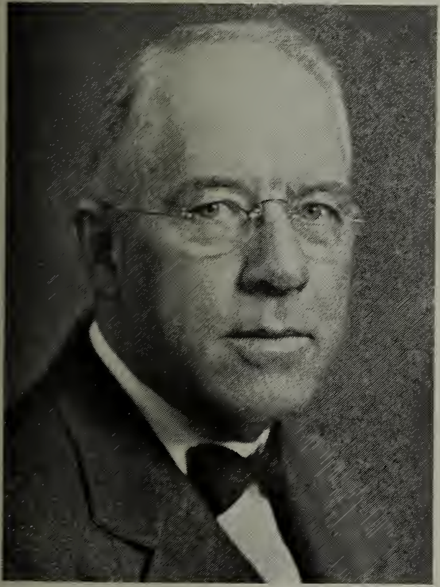
MOCCASIN POWER PENSTOCKS

This view from transformer yard of Moccasin Power Plant shows the penstocks through which water falls 1300 feet to turn the turbines and generators of the Hetch Hetchy power system.

ELECTRIC POWER BUREAU

HETCH HETCHY POWER OPERATION
STREET LIGHTING
GAS AND ELECTRIC POWER SUPPLY
RAPID TRANSIT
MUNICIPAL RAILWAY ENGINEERING

PAUL J. OST
Chief Electrical Engineer and Manager



PAUL J. OST
Chief Electrical Engineer

Effective July 1, 1936, the Public Utilities Commission established the Electric Power Bureau and entrusted it with direction of the activities above shown. The Bureau is in charge of Paul J. Ost, Manager and Chief Engineer, assisted by three electrical engineers, Thornton Easler in charge of Hetch Hetchy Power Operation, L. M. Perrin in charge of design and research, and A. O. Olson in charge of street lighting and gas and electric supply. L. V. Degnan is office engineer in charge of railway engineering.

The amount of power produced at the City's two plants during the year shows a diminution of 2.86 per cent as compared to the previous year. This is due to an extensive job of rebucketing the water wheels at Moccasin, and will be more than offset in the coming year by the resulting increase in efficiency.

After failure of the citizens at the election of March 9, 1937, to authorize the issuance of revenue bonds to build a power distribution system, the Secretary of the Interior requested the Department of Justice to bring suit against the City, to enforce the power provisions of the Raker Act as he interprets them. Court action will probably take place in October, 1937. City Attorney John J. O'Toole will be in charge of the litigation for the City.

Very much has been accomplished during the year in constructing municipally owned street lighting systems. As the cost of installing such street lighting is saved in about nine years by the reduced cost of operation, it is evident that the City might advantageously adopt an annual program of lighting installations.

Constant watch of street lighting service and the check of gas, light and power service to municipal institutions, buildings, etc., have resulted in substantial savings to the City during the year.

The necessity for rapid transit, ever becoming more acute, has been brought to the attention of the Supervisors, and it is expected that a rapid transit proposition may be put on the November ballot.

HETCH HETCHY POWER OPERATION

Reservoirs

Lake Eleanor continued to spill from the beginning of the fiscal year until July 28, 1936. In 1937 it began spilling on March 23 and was still spilling at the end of the fiscal year.

Hetch Hetchy reservoir was again held below spill point to assist the contractor on the work of enlarging the dam. During the period of very heavy runoff enough outlet valves were kept open to hold the water surface 20 feet below the spillway; as the runoff decreased the valves were successively closed until the water level stood at the spillways. At the end of the fiscal year, more water was being released than could be passed through Moccasin Power House. As of June 30, storage in the reservoirs was as follows:

	1937 Acre Feet	1936 Acre Feet
Hetch Hetchy	184,272	202,208
Lake Eleanor	28,003	28,487
Priest	1,342	1,052
Total	213,617	231,747

Power Produced

As noted in the introductory statement the total power generated during the year is slightly less than for the preceding year. The following table shows the comparative figures.

REPORT OF POWER OPERATION

	1936–37 kwh.	1935–36 kwh.	% of Change
Generated: Moccasin Power House	480,300,000	494,583,000	— 2.89
Early Intake Power House	22,286,500	22,809,300	— 2.19
Total Available	502,586,500	517,392,300	— 2.86
Consigned to P. G. & E. Co.	465,012,000	480,443,000	— 3.21
Used: At Power Houses	740,900	750,986	— 1.34
Mountain and Foothill Divisions	7,569,754	4,475,069	+ 69.15
Losses and unaccounted for	29,263,846	31,723,245	— 7.75
Total Energy	502,586,500	517,392,300	— 2.86

Note: The decrease in amount generated is due largely to rebucketing the wheels in the Moccasin plant, from April 1 to May 21, 1937. It will be more than offset by the gain in 1937-38, due to increased efficiency. The marked inincrease in Mountain Division usage is due to the contractor's operations at O'Shaughnessy Dam.

Rebucketing Water Wheels at Moccasin Power House

The original water wheel installation at Moccasin Power House went into service in August, 1925, and has been operating continuously since that date. The original buckets on the water wheels, which received the full force of the power jet, showed signs of distress after twelve years of service, and two had already broken, while others had cracked and been welded. To forestall serious accident or outage it was decided that the buckets should be replaced with new, more modern and stronger parts. The nozzles from which the power jet issues were also obsolete. By changing these at the same time the buckets were being changed it was possible to bring the unit up to a higher efficiency and thereby save water or increase the output with the same amount of water.

The parts were purchased from the Pelton Water Wheel Company and a contract entered into with the same company for their installation, and at the same time the overhauling of the bearings and servo motors, which had operated continuously since 1925 without opportunity for inspection and adjustment.

Each generating unit is driven by two water wheels which carry seventeen buckets each, or thirty-four buckets for each unit. Two new nozzle tips and needles were also required for each unit. This work was done during the months of April and May in a period of fifty days, during which time it was necessary for one of the four units to be out of service in order that it might be worked on. The Pelton Company's forces worked twenty-four hours a day and carried the work through in remarkably short time considering its magnitude.

While it has been impossible to make accurate efficiency tests, the indications are that the change in parts has resulted in a gain in efficiency of close to 5%. The maximum output has been raised from 79,000 kw. to about 83,000 kw. This latter amount is in excess of the load which can be carried during the hot season without passing the safe temperature limits on the generators and transformers.

The cost of the new parts was $83,201; the cost of installing them $15,043; the cost of the other work on bearings, servo motors, etc., and other parts, was $1,940, making a total cost of labor and material supplied by the Pelton Company $100,184. In addition to this the City's force expended $2,000.

It was estimated that the work would cause the year's revenue to fall below that included in the budget. Favorable water conditions early in the year and the short time required to make the change resulted in the year's revenue actually exceeding the estimated revenue by $53,210.56, although below that of the preceding year.

While the units were out of service for rebucketing, the walls of the wheel pits were treated to make them more nearly waterproof. This was done by sand blasting the surfaces, cutting out and refilling all cracks and applying three coats of waterproofing plaster.

Miscellaneous Maintenance

Much of the miscellaneous maintenance work was done either by the Water Supply forces or jointly with the Power Operative forces and several items already have been noted in the report of the Water Supply Department. The electrical crews had the customary work of keeping power and telephone lines in repair after fires, storms, etc.

At Early Intake, Unit No. 2 was out for repairs from July 25 to 30, 1936. The trestle of the Intake tramway over the road was rebuilt entirely, using concrete piers and No. 1 common douglas fir treated with creosote. The road was lowered to give ample head room for the gas shovel and other road equipment.

The heavy snowfall caused several slides on this road which were repaired by building rock walls and fill. A number of culverts were installed and the road was widened on several rocky points.

The road trestle between tunnels 4 and 5, Cherry Aqueduct, was repaired with creosoted timber and a cattle guard was built near tunnel 4.

On the downstream face of Early Intake Diversion Dam, 400 ft. of construction joints were chipped and filled with a concrete waterproofing material.

At Groveland a new electrical shop and gasoline storage tank were installed to replace similar old facilities.

At Moccasin the camp water supply was improved by replacing 1,000 ft. of 4-in. black pipe with spiral welded pipe. Preparations are being made for installation of chlorinating machines on the camp supply. A mesh fence on steel posts set in concrete was installed around the power house bus yard to prevent trespass. The bus structure was repainted with a dull aluminum paint.

Other replacements include a shed 20 x 40 ft. for storing electrical material, a similar building 12 x 16 ft. to house pipe-threading equipment and a 2-stall garage 20 x 22 ft.

The 22 kv. switch structure near No. 7 transformer bank was rebuilt. On the transmission tower line 1087 dead end insulators were found to be defective, and 757 of them were replaced. Broken strands in the transmission conductor at suspension points made it necessary to install 62 armor rods. On the 22 kv. pole line, 59 poles were replaced and on the telephone lines 119 poles.

Roads around Moccasin were resurfaced and re-oiled. The machine shop was completely relined with veneer board and in the clubhouse the main room floor was covered with linoleum.

The swimming pool at Moccasin is exceedingly popular. The dressing rooms are still incomplete, awaiting installation of plumbing fixtures which have already been purchased.

The financial aspect of the power system is set forth in the following tables.

COMPARATIVE INCOME STATEMENT

REVENUES:	1936-37 12 Months 7/1 to 6/30	1935-36 12 Months 7/1 to 6/30
Power Sales:		
Moccasin Power House:		
General Consumers	$ 8,367,742.19	$ 8,566,560.40
Less Distribution Commission	6,153,343.84	6,292,445.51
	$ 2,214,398.35	$ 2,274,114.89
Early Intake Power House:		
General Consumers	$ 54,889.33	$ 70,837.49
Construction, Operation and Miscellaneous	34,965.44	21,101.40
	$ 89,854.77	$ 91,938.89
Total Power Sales	$ 2,304,253.12	$ 2,366,053.78
Other Revenues:		
Interest Earned, Rents, etc.	$ 18,218.71	$ 23,546.57
Total Revenues	$ 2,322,471.83	$ 2,389,600.35

EXPENSES:

Operating Expenses:		
Exclusive of Depreciation:		
Production	$ 158,800.89	$ 172,060.51
Transmission	26,091.36	21,657.88
General and Miscellaneous	48,540.76	51,288.22
	$ 233,433.01	$ 245,006.61
Allowance for Depreciation	$ 175,000.00	$ 175,000.00
Total Operating Expenses	$ 408,433.01	$ 420,006.61
Bond Interest	645,205.50	668,250.00
Total Expenses	$ 1,053,638.51	$ 1,088,256.61
Net Profit	$ 1,268,833.32	$ 1,301,343.74
Comparative charges for Federal Income Taxes as required by Section No. 64 of the Charter amount to	$ 175,000.00	$ 179,000.00

SURPLUS ACCOUNT

For the Twelve Months Ending June 30, 1937

	Contributed	Earned	Total
Balance June 30, 1936	$ 1,704,032.49	$ 9,642,349.59	$11,346,382.08
Additions:			
Airport Eng. Expenditures	....	130.28	130.28
Depreciation Replace. 1935-36	1,304.42	....	1,304.42
Net Profit	....	1,268,833.32	1,268,833.32
	$ 1,705,336.91	$10,911,313.19	$12,616,650.10
Deductions:			
Contributions Hetch Hetchy Water Supply (1936-37)	$ 959,547.65	....	$ 959,547.65
Interest Earned on Monthly Cash Balance Retained in General Fund	5,361.27	....	5,361.27
Hetch Hetchy Water Supply Equipment, Buildings, Structures and Improvements:			
Equipment	1,027.71	....	1,027.71
Bldgs., Structures & Imp.	10,714.36	....	10,714.36
Current Depreciation Replacements (1936-37)	4,101.75	....	4,101.75
Additional contributions to H.H.W.S. for bond interest and redemption for fiscal year 1936-37, Res. No. 2764, 9/1/36	85,000.00	....	85,000.00
	$ 1,065,752.74	....	$ 1,065,752.74
Balance June 30, 1937	$ 639,584.17	$10,911,313.19	$11,550,897.36

PROPRIETARY BALANCE SHEET—JUNE 30, 1937

ASSETS

Fixed Capital:			
Fixed Capital in Service		$26,141,712.79	
Fixed Capital under Construction		....	
		$26,141,712.79	
Less Depreciation Allowance		1,627,199.29	$24,514,513.50
Cash:			
On Deposit with Treasurer:			
Operating Fund		$ 21,477.59	
Depreciation Fund		91,764.45	
		$113,242.04	
Other Cash:			
Revolving Funds	$3,000.00		
In Transit	519.01	3,519.01	116,761.05
Accounts Receivable			199,611.88
Interfund Accounts—P.S.E.:			
Hetch Hetchy Dam—1933		$ 141,696.52	
Hetch Hetchy Water Supply		15,059.80	156,756.32
Interfund Accounts—General City and County:			
Recreation Department			81.60
Deferred Charges:			
Material and Supplies		$ 21,553.69	
Prepaid Bond Interest and Redemption		....	
Prepaid Expense—Public Utilities Commission		....	
Property Valuation		392,006.43	
Suspense Debits		14,133.90	
Prepaid Operating Advances—H.H. Water Supply		....	
Work in Progress		....	
H.H. Water Supply—Bond Interest and Redemption		....	
Airport Engineering Expenditures		130.28	
Uncompleted Contracts, Purchase Orders and other Commitments, Operating Fund		13,188.02	
Uncompleted Contracts, Purchase Orders and other Commitments, Depreciation Fund		8,111.64	449,123.96
			$25,436,848.31

LIABILITIES

Bonded Debt:		
Issue of July 1, 1910, prorated to Power Division due July 1, 1938 to 1964, inclusive		$13,825,800.00
Bond Interest Accrued, Not Due:		
Interfund Accounts—P.S.E.		
Hetch Hetchy Water Supply	$ 22,347.64	
San Francisco Water Department	109.92	22,457.56
Interfund Accounts—General City and County:		
Employees' Retirement System	$ 275.61	
Public Utilities Commission	2,065.09	2,340.70
Accounts Payable:		
Warrants Outstanding—Operating Fund	$ 5,914.25	
Warrants Outstanding—Depreciation Fund	......	
General Creditors	6,577.54	
Contract Payments Due	......	
Contract Retentions	1,547.00	
Contracts, Purchase Orders and other Commitments, Operating Fund	13,188.02	
Contracts, Purchase Orders and other Commitments, Depreciation Fund	8,111.64	35,338.45
Deferred Credits:		
Suspense Credits		
Other Miscellaneous Credits		14.24
Total Liabilities		$13,885,950.95
SURPLUS		
Detailed Schedule Annexed (See Sheet 2)		$11,550,897.36
		$25,436,848.31

PRODUCTION

		1936-37 12 Months 7/1 to 6/30	1935-36 12 Months 7/1 to 6/30
	Operation:		
6000	Superintendence	$ 13,735.82	$ 14,680.53
6005	Hydraulic Labor	11,391.14	11,124.48
6010	Station Labor	44,543.76	44,227.33
6015	Miscellaneous Labor	9,690.45	18,690.46
6020	Supplies and Expenses	16,066.99	17,157.68
6030	Contributions to Retirement System	3,044.04	3,426.64
6035	Compensation Insurance	....	652.14
		$ 98,472.20	$109,959.26
	Maintenance:		
6050	Structures	$ 16,720.10	$ 22,544.39
6055	Reservoirs, Dams and Intakes	3,663.03	4,343.82
6060	Waterways	2,724.28	4,220.09
6065	Forebays, Penstocks and Tailraces	487.71	1,031.49
6070	Roads and Trails	6,646.98	5,385.41
6075	Hydraulic Power Plant Equipment	1,308.48	1,378.81
6080	Miscellaneous Power Plant Equipment	4,616.32	733.81
		$ 36,166.90	$ 39,637.82
	Miscellaneous:		
6090	Production Rents	$ 18,000.00	$ 18,000.00
6091	Relief and Welfare Work	....	734.54
6092	Communication System	5,703.33	3,027.12
6093	Fire Fighting and Patrol	22.47	22.47
6094	Hydrography	435.99	679.30
		$ 24,161.79	$ 22,463.43
	Total Production Expense	$158,800.89	$172,060.51

TRANSMISSION

		1936-37 12 Months 7/1 to 6/30	1935-36 12 Months 7/1 to 6/30
	Operation:		
6200	Superintendence	$ 3,640.14	$ 3,116.99
6205	Station Labor	....	19.99
6210	Substation Supplies and Expense	20.05	294.95
6215	Transmission Lines Labor	8,759.68	4,608.07
6220	Transmission Lines Supplies and Expense	1,553.77	1,043.58
6225	Contribution to Retirement System	452.08	292.88
6235	Compensation Insurance	....	116.20
		$ 14,425.72	$ 9,492.66
	Maintenance:		
6250	Transmission Structures	$ 1.94	$ 505.03
6255	Substation Equipment	1,967.37	1,623.10
6260	Towers and Fixtures	442.05	955.09
6265	Tower Line Conductors	1,101.44	115.66
6270	Poles and Fixtures	4,524.14	4,026.50
6275	Pole Line Conductors	1,198.56	351.00
6280	Roads and Trails	706.37	349.20
6285	Miscellaneous	1,693.77	3,939.64
		$ 11,635.64	$ 11,865.22
	Miscellaneous:		
6290	Transmission Rents	$ 30.00	$ 300.00
	Total Transmission Expense	$ 26,091.36	$ 21,657.88

ADMINISTRATIVE AND GENERAL

		1936-37 12 Months 7/1 to 6/30	1935-36 12 Months 7/1 to 6/30
	Administrative and General:		
8000	Salaries and Wages	$ 9,941.45	$ 8,760.18
8005	Contributions to Retirement System	502.37	426.49
8010	Services of Other Departments	25,680.66	24,513.42
8015	Professional Services	2,815.74	1,775.00
8020	Stationery, Office Supplies and Postage	289.66	353.29
8025	Telephone and Telegraph	145.39	180.91
8030	Traveling	66.18	477.68
8035	Compensation Insurance	....	5.23
8040	Injuries and Damages	467.22	851.54
8051	Automobile Insurance Premiums	1,025.87	693.32
8095	Miscellaneous	225.00	4,700.08
8096	Maintenance of Automotive Equipment	2,902.47	5,076.69
		$ 44,062.01	$ 47,813.83
	Fixed Charges:		
9010	Rents	....	30.00
9020	Taxes (Actually Paid)	4,478.75	3,444.39
		$ 4.478.75	$ 3,474.39
	Total Administrative and General	$ 48,540.76	$ 51,288.22

ACCOUNT 1000—FIXED CAPITAL IN SERVICE

July 1, 1936, to June 30, 1937

		Balance June 30, 1936	Gross Additions July 1, 1936-June 30, 1937	Retirements July 1, 1936-June 30, 1937	Adjustments July 1, 1936-June 30, 1937	Balance June 30, 1937
312	Hydraulic power land	$ 895,699.15	......	......	......	$ 895,699.15
313	Hydraulic power plant structures	1,345,750.47	$ 15,483.88	$ 9,999.12	$ 9,444.88	1,360.680.11
314	Reservoirs, dams and intakes	6,035,047.89	217.93	......	......	6,035,265.82
316	Waterways	6,790,219.36	......	......	......	6,790,219.36
317	Forebays, penstocks and tailraces	2,625,825.49	......	......	......	2,625,825.49
318	Production roads and trails	554,698.37	......	......	......	554,698.37
319-1	Hydraulic power plant equipment—water turbines and water wheels	414,701.99	106,018.65	83,128.00	......	437,592.64
319-2	Hydraulic power plant equipment—electrical	714,887.82	......	......	......	714,887.82
319-4	Hydraulic power plant equipment—other powerhouse equipment	567.24	......	......	......	567.24
323	Miscellaneous power plant equipment	24,565.35	......	......	......	24,565.35
331	Transmission lands	139,263.47	......	......	......	139,263.47
332	Transmission structures	64,496.17	408.18	......	......	64,904.35
333	Transmission substation equipment	270,894,52	......	......	......	270,894.52
334	Transmission towers and fixtures	762,413.82	......	1,937.50	......	760,476.32
335	Transmission tower line conductors	933,355.00	4,292.09	4,292.09	......	933,355.00
336	Transmission poles and fixtures	2,957.92	2,442.21	2,442.21	5,139.89	8,097.81
337	Transmission pole line conductors	2,235.99	......	......	......	2,235.99
340	Transmission roads and trails	1,249.58	......	......	......	1,249.58
341	Miscellaneous transmission capital	84.38	......	......	......	84.38
344	Distribution substation equipment	386.69	......	......	......	386.69
346	Distribution poles, towers and fixtures	120.10	......	......	......	120.10
347	Distribution overhead conductors	228.49	......	......	......	228.49
352	Consumers' meters	212.47	......	......	......	212.47
362	General Office equipment	919.53	895.58	35.00	......	1,780.11
366-1	Other general structures—general shop structures	23,178.61	......	......	......	23,178.61
366-2	Other general structures—Store Department structures	22,284.49	2,229.00	2,229.00	......	22,284.49
366-3	Other general structures—Transportation Department structures	4,543.15	......	......	......	4,543.15
367	General shops equipment	24,553.85	198.06	198.06	......	24,553.85
372	Stores Department equipment	1,361.39	......	......	......	1,361.39
377	Transportation Department equipment	51,251.50	13,023.65	5,211.51	......	59,063.64
382	Communication system equipment	18,216.41	2,460.27	2,898.47	263.90	18,042.11
387	Miscellaneous equipment	3,873.29	2,062.45	1,867.10	1,867.10	5,935.74
389	General construction equipment	1,870.02	......	......	......	1,870.02
390	Engineering and superintendence during construction	403,617.24	......	......	......	403,617.24
391	Law expenses during construction	103,118.92	......	......	......	103,118.92
392	Injuries and damages during construction	2,340.34	......	......	......	2,340.34
393	Taxes during construction	27,959.29	......	......	......	27,959.29
394	Interest during construction	3,491,855.47	......	......	......	3,491,855.47
395	Miscellaneous construction—General officers and clerks	184,914.73	......	......	......	184,914.73
397	Fixed capital not classified by prescribed accounts	160,498.94	......	......	*16,715.77*	143,783.17
		$26,106,218.90	$149,731.95	$114,238.06	......	$26,141,712.79

COMPARATIVE INCOME STATEMENT

Fiscal Year Ended June 30, 1936, and June 30, 1937, and Period August 16, 1925 to June 30, 1937

	Fiscal Year Ended June 30, 1937	Fiscal Year Ended June 30, 1936	Period Aug. 16, 1925 to June 30, 1937
REVENUE			
Power Sales:			
Moccasin Power Sales			
General Consumers	$8,367,742.19	$8,566,560.40	$92,661,466.05
Less Distribution Commission	6,153,343.84	6,292,445.51	67,773,351.39
	2,214,398.35	2,274,114.89	24,888,114.66
Water Supply for Construction	....	....	604,987.66
	2,214,398.35	2,274,114.89	25,493,102.32
Early Intake Power House:			
Other Electric Corporations	54,889.33	70,837.49	596,341.82
General Consumers	34,965.44	21,101.40	64,612.17
	89,854.77	91,938.89	660,953.99
Water Supply for Construction	....	....	199.79
	89,854.77	91,938.89	661,153.78
Total Power Sales	2,304,253.12	2,366,053.78	26,154,256.10
Other Revenues:			
Interest Earned, Rents, Etc.	18,218.71	23,546.57	434,680.51
Total Revenues	$2,322,471.83	$2,389,600.35	$26,588.936.61
EXPENSES			
Operating Expenses:			
Exclusive of Depreciation:			
Production	$ 158,800.89	$ 172,060.51	$ 2,126,305.23
Transmission	26,091.36	21,657.88	306,597.76
General and Miscellaneous	48,540.76	51,288.22	671,629.71
	233,433.01	245,006.61	3,104,532.70
Allowance for Depreciation	175,000.00	175,000.00	2,070,833.00
	408,433.01	420,006.61	5,175,365.70
Bond Interest	645,205.50	668,250.00	9,199,787.62
Amortization of Bond Discount	....	....	1,302,700.38
Total Expenses	$1,053,638.51	$1,088,256.61	$15,677,853.70
Net Profit	$1,268,833.32	$1,301,343.74	$10,911.082.91
Misc. Credits to Profit and Loss	130.28	100.00	230.28
Earned Surplus	$1,268,963.60	$1,301,443.74	$10,911,313.19
Less Comparative Charges for Federal Income Taxes as required by Section 64 of the Charter	175,000.00	179,000.00	1,498,000.00
Net Income on Comparative Basis	$1,093,963.60	$1,122,443.74	$ 9,413,313.19

COMPARISON OF ESTIMATED AND ACTUAL REVENUES

Fiscal Year 1936-1937

	Estimated July 1, 1936 June 30, 1937	Actual July 1, 1936 June 30, 1937	Increase or Decrease
Early Intake Power House	$ 80,000.00	$ 89,854.77	$ 9,854.77
Moccasin Power House	2,170,000.00	2,214,398.35	44,398.35
Rent from Property	4,800.00	5,332.85	532.85
Sales of Water	500.00	807.04	307.04
Meal Receipts	8,000.00	6,535.00	*1,465.00*
Miscellaneous Receipts	600.00	182.55	*417.45*
	$2,263,900.00	$2,317,110.56	$53,210.56
Income Statement:			
Total Revenues July 1, 1936 to June 30, 1937		2,322,471.83	
Interest Earned on Treasurer's Balances Deposited to General Fund		5,361.27	

POWER DISPOSAL

In the last two annual reports the current history of the controversy over the disposal of Hetch Hetchy power was reported. As stated in last year's report, three plans were submitted to the Board of Supervisors on July 15, 1936. All of these were drawn up to comply with the Raker Act as interpreted by the Secretary of Interior.

Of these three plans that designated as No. 7 was estimated to produce the most favorable results. Its cost was $43,700,000 as compared with $27,015,000 and $46,286,000 for plans Nos. 5 and 6 respectively, and contemplated the acquisition of all of the electric distribution property in San Francisco, excluding the portion of the Pacific Gas and Electric Company system serving the Market Street Railway.

Under Plan 7 the Pacific Gas and Electric Company was to retain the steam generating plants and other property for which severance damages were allowed by the California Railroad Commission in the 1924 valuation. The existing Hetch Hetchy plants were to be augmented by constructing the Red Mountain Bar Plant. All Hetch Hetchy energy was to be delivered to the Pacific Gas and Electric Company at their Newark Substation as at present. The Company was to transmit the City's energy from Newark to San Francisco and reduce it to sub-transmission voltage for a fixed annual fee. All electric supply required to meet local demands over and above that available from the Hetch Hetchy plants, together with standby, was to be purchased from the Company under existing resale rate schedules. This plan did not disrupt the Company's generating and transmission property and in effect only changed the position of the Company in San Francisco from that of retailer to that of wholesaler.

After reducing the existing electric rates to produce a saving of $1,750,000, it was estimated that the City could meet all operating costs, bond interest and redeem the bonds in 25 years. Even after making a further allowance for tax loss by reason of the City's acquisition of property on which the Company was paying local taxes, the proposal showed a surplus earning of more than $4,000,000 annually.

Plan 7 was approved as complying with the Raker Act by the Secretary of the Interior on December 16, 1936.

As the proposal was self supporting it was thought best to secure the necessary funds by amending the Charter to permit the issuance of revenue bonds to carry out the program. The maximum amount of indebtedness to be incurred was limited to $50,000,000. A special election was held on March 9, 1937 for the purpose of securing the revenue bond amendment to the Charter. A month before the election the Pacific Gas and Electric Company made a substantial reduction in rates to domestic and commercial consumers and waged an energetic campaign against the issuance of revenue bonds for the acquisition of their property. At the election 65,762 voted in favor and 78,101 against the amendment. While the amendment did not carry it was interesting to note that a change of a little more than 6,000 voters from one side to the other would have secured its approval, a majority only being necessary to amend the Charter.

The result of the election was reported to the Secretary of the Interior who under date of March 11 addressed the following communication to the Mayor and the Board of Supervisors:

> "Gentlemen: I have been advised that on March 9 the electors of San Francisco rejected Charter Amendment No. 1 which was designed to authorize the issuance of revenue bonds for the acquisition and operation of a municipally owned electric distribution system. It is my understanding that had their Charter amendment been enacted the City and County of San Francisco would have undertaken a program for the distribution of electric energy generated on the Hetch Hetchy Project in accordance with the requirements of Section 6 of the Raker Act.
>
> "I have already advised you of my determination that San Francisco is now and for many years past has been violating the provisions of Section 6 of the Raker Act by selling Hetch Hetchy energy to the Pacific Gas and Electric Company for distribution to consumers. Unless definite assurance can be given to me within fifteen days after receipt of this letter that San Francisco will cease its violation of the provisions of the Raker Act, I shall refer this matter to the Attorney General of the United States, with my request that appropriate action be taken in the courts to effectuate the provisions of the statute."

Diligent attention was given to the matter and the Board of Supervisors made a telegraphic reply to the Secretary on March 29 which reads in part:

> "Board of Supervisors of San Francisco does hereby request you to proceed to lay matter before the Attorney General with understanding that the City of San Francisco will be given opportunity to present its case before him. This Board believes that the agency contract under which City is now acting is fully in accord with the Raker Act and believes that the long pending

> controversy can best be determined by the Attorney General or by the court. This message is sent you with the hope that a final conclusion may be reached as to San Francisco's position with regard to its compliance with the terms of the Raker Act."

To this the Secretary replied on April 2:

> "I am requesting the Attorney General to institute suit immediately and am forwarding to him a copy of your telegram."

Public sentiment relative to electric generation and distribution has materially changed since 1913 when the Raker Act was passed. Even the Federal Government, through the Department of the Interior, has been marketing hydroelectric energy from irrigation and similar projects through private agencies and is planning on doing so to a greater extent in the future. It did not therefore seem just that our City should be penalized for doing what the complaining Department was itself doing on an ever increasing scale. Feeling that at least the Department could not be censored for a less rigid interpretation of the Act of 1913, the officials of the City requested an opportunity to present the City's case in the light of present day conditions. To this request for a conference the Attorney General replied on April 17 as follows:

> "In view of the imperative and mandatory character of the statute which requires that the Attorney General bring suit at the request of the Secretary of the Interior I consulted the Secretary of the Interior but he insists that the prosecution go ahead and that no purpose would be served by the conference you suggest. I am therefore compelled to proceed with the litigation. If you wish to pursue further your proposal for a conference I would suggest that you get in touch with the Secretary of the Interior upon whom the responsibility rests in this case."

The suit was filed in the U. S. District Court for the Northern District of California on April 27. Further correspondence with the Secretary of the Interior asking for a conference with him brought forth the following telegram dated May 6:

> "Hetch Hetchy power matter is in hands of Department of Justice. For two years I have patiently tried to persuade San Francisco to obey the mandate in a law which it originally concurred in but without success. On contrary some of the newspapers of San Francisco and certain of its citizens have questioned the good faith of this department and defied it to enforce the law. Can see nothing to be gained from such a conference as you propose and in any event I could not with propriety make an appointment to discuss a matter that is within the jurisdiction of the Department of Justice."

These two refusals to deal with the matter informally left the City no alternative but to defend its rights in the court. City Attorney O'Toole is in charge of the City's defense. The case may not be placed on the calendar until late in the autumn.

STREET LIGHTING

A definite revival of street lighting activity was evident in all parts of the country last year. During the depression years the population and the resulting traffic had steadily increased while needed lighting improvements had been delayed because of economic pressure. Improved economic conditions have brought public demand for better lighted streets.

The construction of the two great bridges has not only brought about extensive changes of traffic flow but has caused changes in the nature of a great number of streets, many of which have been reconstructed to meet the new demands. During this reconstruction work new street lights have been installed as far as available funds have permitted.

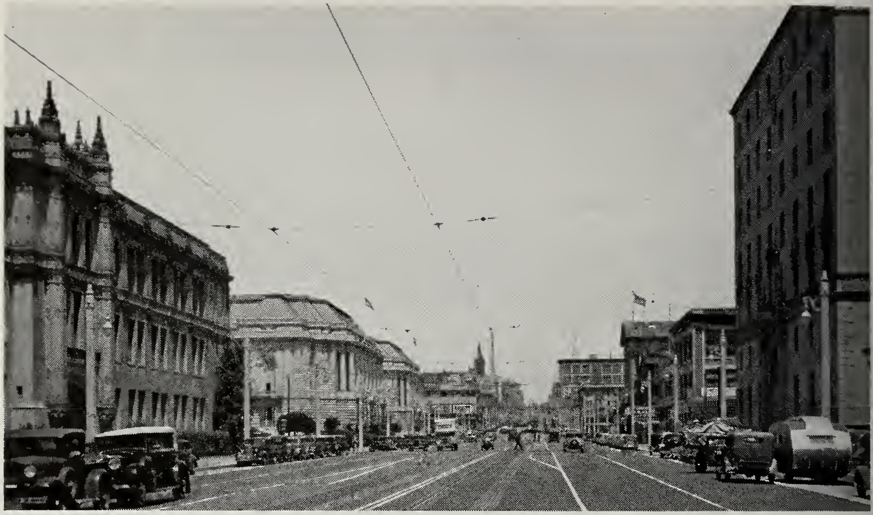
The $154,000 set up in the budget for this purpose, augmented by $64,000 in surplus and reserves in operating funds together with materials and labor furnished by the W.P.A., were used in constructing street lighting improvements valued in excess of $270,000. In addition $20,000 has been spent for street lighting by real estate developers in new residential tracts.

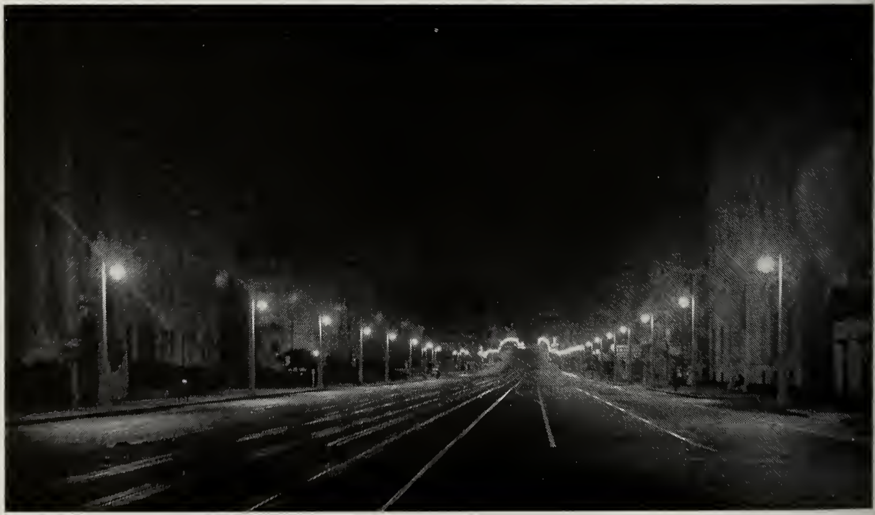
The year's betterments consist of 1,286 lights with their appurtenances 1,005 of which are already in service and 281 in the course of installation. The locations and expenditures for these new lights are as follows:

TABLE I
NEW CITY OWNED STREET LIGHTS CONSTRUCTED

Streets and Tracts	No. Lights	Contract Price	Total Cost to City	Value Furnished by Others	Total Value
Installed by Real Estate Subdividers:					
16th Avenue	2	......	......	$ 796.00	$ 796.00
Francisco Heights	23	......	......	8,017.85	8,017.85
Lakeside	31	......	......	8,782.74	8,782.74
University Terrace	7	......	......	1,966.00	1,966.00
	63	......	......	$ 19,562.59	$ 19,562.59
Financed from 1935-36 Funds:					
Fifth Street	54	$ 12,218.00	$ 11,791.63	$ 5,961.60	$ 17,753.23
Eighth Street	40	7,044.00	7,588.03	3,477.95	11,065.98
Turk and Arguello Sts.	12	2,389.00	2,647.74	......	2,647.74
	106	$ 21,651.00	$ 22,027.40	$ 9,439.55	$ 31,466.95
Financed from 1936-37 Funds:					
Sixth Street	42	$ 11,594.00	$ 12,451.13	......	$ 12,451.13
Beale Street	29	12,606.00	13,186.54	......	13,186.54
Folsom Street	91	23,220.00	24,577.30	......	24.577.30
Harrison Street	60	15,889.00	17,145.75	......	17,145.75
Harrison Viaduct	14	......	1,417.00	......	1,417.00
Bryant Street	27	7,550.00	8,179.52	......	8,179.52
25th Avenue	53	8,393.00	8,960.87	$ 5,660.00	14,620.87
Van Ness Avenue	291	36,620.00	40,099.10	12,792.00	52,891.10
San Jose Avenue	9	3,152.00	3,664.15	......	3,664.15
Taylor Street	100	11,243.00 9,295.75	21,437.65	......	21,437.65
Sloat Skyline Contract	1	......	150.00	......	150.00
St. Francis Circle	1	......	404.75	......	404.75
Portola Drive	1	......	484.00	......	484.00
Market Street	105	WPA	9,772.31	8,150.00	17.922.31
Richardson Avenue	26	5,486.00	5,886.79	......	5,886.79
Anza Street	9	2,515.00	2,500.75	......	2,500.75
Bay Street	49	WPA	7,081.19	4,625.00	11,706.19
Lombard Street	10	"	1,365.32	1,054.00	2,419.32
Grove Street	8	"	841.67	640.00	1,481.67
Fell Street*	104	"	14,391.52	9,120.00	23.511.52
Gough Street*	68	"	9,532.19	6,400.00	15.932.19
Golden Gate Avenue*	125	"	14,500.00	12,260.00	26,760.00
	1,223	$147,563.75	$218,029.50	$ 60,701.00	$281,245.50
Total	1,392	$169,214.75	$240,056.90	$ 89,703.14	$329,760.04

*Under construction and costs estimated.





DAY AND NIGHT VIEWS OF VAN NESS AVENUE, ONE OF SAN FRANCISCO'S MOST HEAVILY TRAVELED STREETS, SHOWING NEW LIGHTING.

Upper: day view looking north from Fell Street.
Lower: night view looking north from Fell Street.

RICHARDSON AVENUE LIGHTING
Effective centerstrip lighting installed on this approach to the Golden Gate Bridge.

On the streets south of Market Street, adjacent to the Bay Bridge approach which were reconstructed by the Department of Public Works, 345 twenty foot boulevard type metal standards with modern luminaires and 6,000 lumen lamps were installed. The installations on Fifth and Eighth Streets were financed from the 1935-36 budget with P.W.A. aid, while the other streets were improved under Electric Power Bureau contracts from funds set up in the 1936-37 budget.

On Taylor Street between Market and Post Streets there were installed under contract fifty specially designed combination wrought and cast steel standards with cast iron brackets supporting two 6,000 lumen pendant luminaires of the most recent design. This installation is a departure from the company owned system in the adjacent downtown area which employs two light upright magnetite arc light units.

The old lighting system on Van Ness Avenue, installed in 1914 was replaced with 259 specially designed pendant brackets mounted on the Municipal Railway trolley poles, supporting 6,000 lumen pendant units. This street was widened and reconstructed by the W.P.A. who in connection with the reconstruction furnished and installed a complete conduit system for lighting. The installation of the cables and lighting equipment was done under an Electric Power Bureau contract. This contract also included the installation of thirty-two 16½-foot concrete standards with 4,000 lumen units on McAllister Street and Grove Streets in the Civic Center.

On 25th Avenue between El Camino del Mar and Fulton Street, the W.P.A. likewise installed conduits and foundations for standards in connection with the reconstruction of the street. The cables and lighting equipment were installed by the Electric Power Bureau under a contract. This system consists of forty-seven 16½-foot concrete standards and 6 brackets mounted on trolley poles, all with 4,000 lumen luminaires.

Market Street between Gough and Castro Streets was also widened and reconstructed by the W.P.A., who at the same time installed a complete lighting system. Conduits and miscellaneous materials were furnished by the W.P.A. while the Electric Power Bureau supplied the lighting equipment and cables. The installation consists of 101 pendant and 4 upright brackets and luminaires mounted on Market Street Railway trolley poles. This installation replaced Pacific Gas and Electric Company owned 4,000 lumen lamps with new 6,000 lumen units and materially improved the lighting of this important street.

On the following streets complete lighting systems have been installed or are in the course of installation as part of the reconstruction program of the W.P.A. project sponsored by the City. The W.P.A. has furnished conduits and materials for foundations and pull boxes, while the Electric Power Bureau has supplied cable lighting equipment and miscellaneous materials. All of these installations have employed a 16½-foot concrete standard with 4,000 lumen units.

Location	No. of Standards
Bay Street—Van Ness Avenue to Fillmore Street	48
Lombard Street—Broderick to Lyon Streets	10
Grove Street—Franklin to Gough Streets	8
Gough Street—McAllister to California Streets	68
Fell Street—Van Ness Avenue to Baker Street	104
Golden Gate Avenue—Van Ness Avenue to Parker Avenue	125
	363

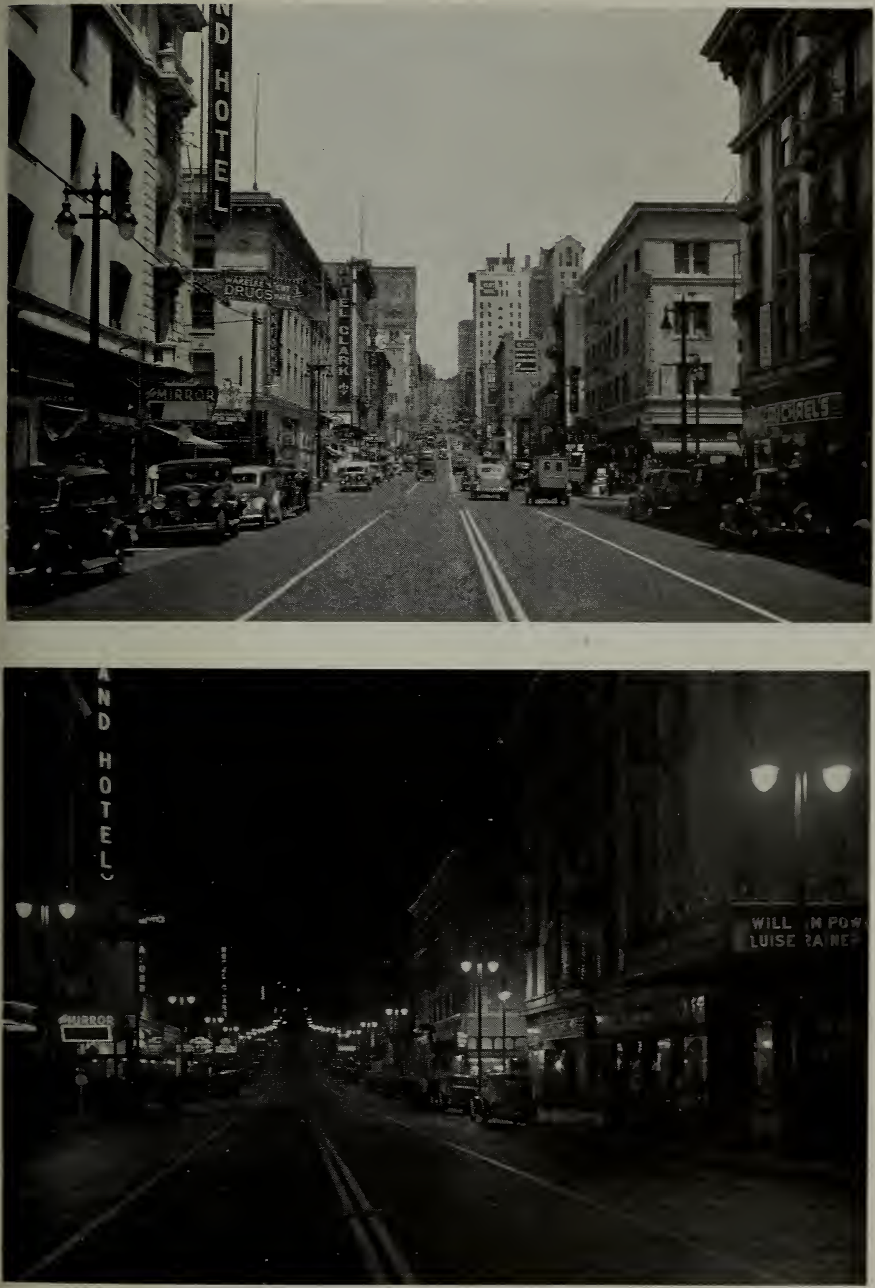
The W.P.A. has also installed 74,400 feet of 1½-inch conduit in all streets widened where their future need was anticipated by the Electric Power Bureau.

All of this work performed by the W.P.A. was planned and supervised by the Electric Power Bureau force. The money expended for these purposes has been credited to the City as part of the sponsor's contribution toward the project. During the fiscal year the City's expenditures from its street lighting funds for this work was $20,716 and in addition $25,000 has or will be spent for materials for use on the jobs under construction.

The department has estimated in detail all of the street lighting jobs done under contract and submitted its own bids on some jobs. It was low bidder on the Anza Street installation and was awarded the contract. The bid which secured this contract was 10% below the next bidder. The installation was made by the Department with civil service employees at a cost of 10% less than the bid price. This cost included 5% for overhead charges.

The street lighting installed by the various real estate people in new tracts was planned and inspected by the Department and meets Public Utilities Commission standards of construction. Upon completion all of these installations have been deeded to the City.

The lighting on all streets reconstructed has been materially increased to properly care for the increased traffic. This has been accomplished by either using larger lamp sizes, closer spacing of units, or a combination of both, and in all cases by the use of more modern equipment. The effective lighting has been improved from 50% to 100% and more.



NEW LIGHTS ON TAYLOR STREET, DAY AND NIGHT VIEWS
This street in the downtown area was widened and modern street lighting system was installed.

NEW TAYLOR STREET LIGHTING

If all of the new street lighting had been made by the power company as formerly, the annual addition to the operating cost would be $23,035 higher than with City owned installations. Thus an actual investment of $218,029.50 is yielding an annual return of 10½%.

Company owned lights were removed from the streets where the City installed its equipment. The resulting net increase in the number of lights in use on streets relighted during the year was 168. In addition, the Pacific Gas and Electric Company placed in use on orders from the City, 348 new company owned lights in scattered locations to satisfy requests or needs for better lighting. Thus the year closed with 20,576 lights in service as against 20,060 at the beginning of the year, a net increase of 516 lights.

In spite of increasing the number and candle power of the lamps, operating costs of the street lighting system for the year were $2,258 less than last year. The reduction in cost was due to the lower average cost per lamp brought about by increasing the number of City owned lights.

Yearly street lighting costs and other pertinent data since 1932 when the Public Utilities Commission took over the management of the street lighting, are shown in Table No. II. Details of street lighting expenditures for the year are shown in Table No. III. These figures do not include administration cost, which is combined with those for gas and electric supply and shown in Table VII.

TABLE No. II.

TABULATION OF STREET LIGHTING EXPENDITURES 1932-1937

Fiscal Year	Amount of Appropriation	No. Lights at Close of Year	Cost of Operation	% of Taxes	Cost per Capita	Average Cost Lamp per Yr.	New Construction
1931-32....	$865,000.00	19,500	$855,289.34	...	$1.28	$43.86	......
1932-33....	850,000.00	17,369	762,933.84	3.10	1.12	43.93	......
1933-34....	780,000.00	18,115	696,126.56	2.48	1.00	38.43	$ 52,421.00
1934-35....	766,000.00	20,383	698,701.94	2.32	.98	34.28	43,109.99
1935-36....	699,600.00	20,060	677,128.37	2.24	.93	33.76	35,264.90
1936-37....	728,000.00	20,576	674,869.86	2.15	.91	32.79	218,029.50
1937-38....	735,000.00	....	......	2.29*	.99*	....	......

*Based on total appropriation.

NEW LIGHTS IN CIVIC CENTER

Specially designed brackets on Van Ness Avenue trolley poles.

16½-foot standards in front of the Opera House.

TABLE No. III

COST OF STREET LIGHTING OPERATION 1936-37

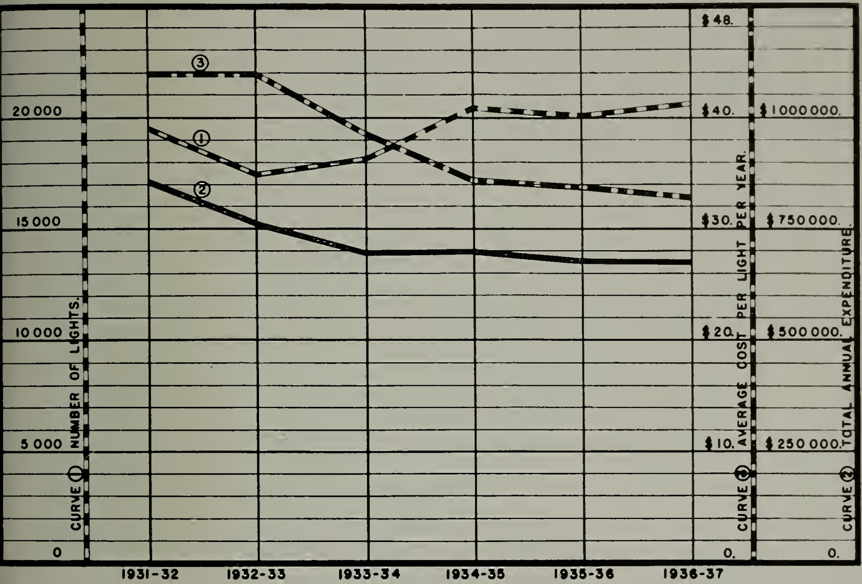
Contractual Services:		
Gross Street Lighting Expenses		$689,132.35
Less: Market Street Railway Portion	$12,576.00	
Outages	2,584.37	15,160.37
Net Street Lighting		673,971.98
Replacements and Repairs:		
Replacements and Repairs	$ 2,774.26	
Less: Collections for damages	2,128.01	
Net Replacements and Repairs		646.25
Pole Space Rentals		251.63
Total Street Lighting Expenditures		$674,869.86

TABLE No. IV
DEPARTMENTAL GAS AND ELECTRICITY CONSUMPTION AND EXPENDITURES 1936-37

CONSUMPTION Electricity No. of Accts.	Kw hrs.	Gas No. of Accts.	Cubic Feet	Department	EXPENDITURES Gas	Electricity	Total Billed	Miscellaneous Credits & Adjm'ts	Inter-Dept. Transfers	Total
5	186,554	3	1,142,600	Airport	$ 641.66	$ 5,616.38	$ 6,258.04	......	......	$ 6,258.04
7	415.570	1	14,600	Auditorium	32.18	8,113.94	8,146.12	......	$—1,563.11	6,583.01
3	50.132	1	301,700	Detention Home	187.39	1,242.83	1,430.22	$ 3.16	......	1,427.06
4	53,952	..	....	DeYoung Museum	....	1,203.24	1,203.24	......	......	1,203.24
5	59,589	2	778,100	Department of Electricity	392.05	1,270.11	1,662.16	......	......	1,662.16
61	364,483	96	17,384,300	Fire Department	9,441.98	9,900.27	19,342.25	5.80	......	19,336.45
				Department of Health:						
4	164,656	..	....	Hassler Health Home	....	3,457.32	3,457.32	......	......	3,457.32
4	198,814	1	9,500	Central Office	14.21	4,338.43	4,352.64	......	......	4,352.64
6	44,332	6	1,453,500	Emergency Hospital	690.47	1,141.86	1,832.33	......	......	1,832.33
2	161,990	4	120,407,800	Laguna Honda	20,257.74	3,395.20	23,652.94	......	......	23,652.94
2	67,866	2	173,461,800	San Francisco Hospital	29,320.21	2,009.72	31,329.93	......	......	31,329.93
3	2,297	3	212,100	Field Nursing	160.17	63.28	223.45	......	......	223.45
5	141,672	..	....	Legion of Honor	....	2,734.01	2,734.01	......	......	2,734.01
25	492,318	23	3,222,400	Library	1,692.27	10,723.80	12,416.07	.68	......	12,415.39
12	38,292,633	3	905,200	Municipal Railway	484.31	436,083.27	436,567.58	674.40	......	435,893.18
78	2,608,892	18	15,236,900	Park	3,879.06	41,943.24	45,822.30	3,097.72	1,493.83	44,218.41
65	234,505	19	3,349,700	Police	1,926.34	10,406.32	12,332.66	......	344.03	12,676.69
				Department of Public Works:						
2	15,287	..	....	General	....	420.42	420.42	......	......	420.42
4	52,272	..	....	Asphalt Plant	....	1,071.39	1,071.39	......	......	1.071.39
12	69,723	..	....	Drawbridges	....	1,688.05	1,688.05	......	......	1,688.05
..	....	1	48,700	Engineering	41.17	....	41.17	......	......	41.17
2	6,896	1	375,600	Building Repair	216.97	188.52	405.49	......	......	405.49
3	2,590	2	1,400	Street Cleaning	18.48	71.32	89.80	......	......	89.80
9	59,976	..	....	Sewage Pumping	....	1,228.42	1,228.42	......	......	1,228.42
7	123,270	4	969,300	Purchasing Department	527.22	2,808.89	3,336.11	......	......	3,336.11
10	1,419,910	..	....	Public Buildings	....	25,175.48	25,175.48	......	1,563.11	26,738.59
43	178,911	21	1,618,700	Recreation	1,200.23	4,712.63	5,912.86	......	......	5,912.86
3	8,283	2	8,400	Registrar of Voters	21.49	227.83	249.32	......	......	249.32
239	2,228,959	130	10,096,800	Schools	7,501.64	53,243.24	60,744.88	89.63	......	60,655.25
3	634,000	3	23,540,000	Sheriff	5.154.25	10,350.93	15,505.18	......	—1,837.86	13,667.32
5	1,024,200	3	14,800,800	War Memorial	3,390.68	18,184.74	21,575.42	.34	......	21,575.08
				Water Department:						
25	638,503	4	68,892,500	San Francisco Division	11,891.33	13,518.17	25,409.50	3.60	......	25,405.90
14	10,569,718	5	1,570,600	San Mateo Division	781.65	77,927.21	78,708.86	......	......	78,708.86
14	320,754	1	85,600	Alameda	104.05	6,722.54	6,826.59	164.96	......	6,661.63
686	60,893,507	359	459,888,600		$ 99,969.20	$761,183.00	$861,152.20	$4,040.29	......	$857,111.91

NOTE: Miscellaneous Credits and Adjustments are deductions from total billing and are of three classes:

1. Due to Meter Inaccuracy, $123.25.
2. Due to Billing Errors, $674.74.
3. Due to Changing Schedules for Lowest Possible Rates, $3,242.30.



SAN FRANCISCO STREET LIGHTING
Curve 1—Number of lights in service.
Curve 2—Total annual expenditures.
Curve 3—Average annual cost per light.

GAS AND ELECTRIC POWER SUPPLY

This department controls the purchases of gas and electricity for all departments of the City. An annual contract for these services is entered into with the Pacific Gas and Electric Company. Special rates are given by the company for electricity used for light and power within the city limits, but at the election of the City purchases may be made at the regular published schedules. Regular schedules only apply to accounts outside the city limits.

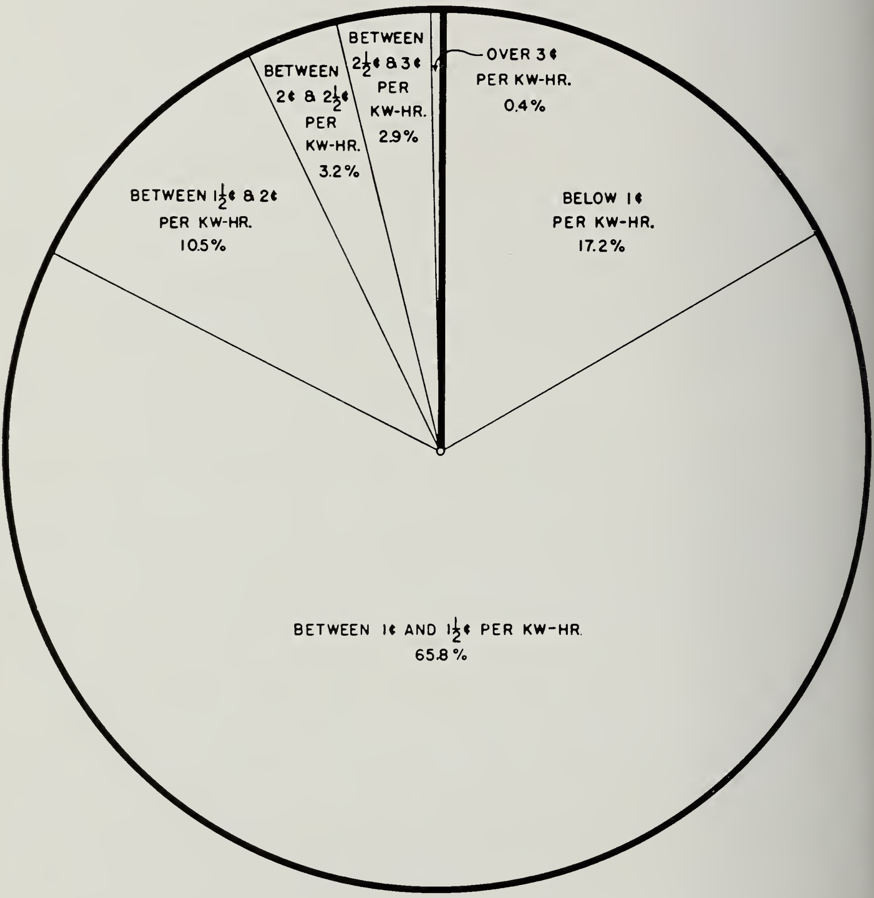
Table No. IV shows the amount of gas and electricity consumed by each department and the expenditure therefore. The table also shows the number of accounts billed to each department, the total being 1,045. Each account is checked periodically so that charges will be based on the most advantageous rate schedule.

The Pacific Gas and Electric Company reduced its electric rates on January 1, 1936, and again on February 1, 1937. Because of these reductions 60 accounts were shifted from flat contract rates to published schedules, producing an annual saving of $7,500.

The gas rates were likewise reduced on May 1, 1936, resulting in an advantageous change of nine accounts to lower rate schedules, cutting the annual cost $4,922. During the year the rates for surplus gas, which fluctuate with the price of oil, were raised, causing an increase in cost of $1,367 for the five accounts involved.

Bill adjustments made by the company at the request of the department amounted to $4,040.29 in favor of the various City Departments. Of this amount $3,242.30 was credited to the several accounts by rebilling on a more favorable rate schedule. Adjustments due to meter inaccuracy totaled $123.25 and billing errors totaled $674.74.

The Tables Nos. V and VI show both gas and electricity purchases grouped by rate schedules and indicate that the average price for electricity was $.0125 per kilowatt hour and for gas $.0216 per 100 cubic feet.



PERCENTAGE OF KILOWATT-HOURS AT VARIOUS RATES.
100%=60,893,507 KW. HR.

TABLE V

PURCHASE OF ELECTRICITY BY SCHEDULES 1936-37

For Lighting and Miscellaneous Use

Schedule	No. of Accounts	Kw hr. Used	Cost	Cost per Kw hr.
2.75¢ flat rate	350	1,583,554	$ 43,544.76	2.75¢
L-1	36	1,676,609	41,869.64	2.50
L-2	1	......	.31	...
L-3	16	217,914	8,538.09	3.92
L-6	1	692,100	13,133.52	1.90
L-7	1	......	31.22	...
L-9	4	94,589	1,534.79	1.62
L-13	1	167	12.17	7.28
C-4	6	1,923,620	34,483.15	1.79
C-7	1	168,720	5,034.95	2.98
D-1	2	37,490	723.02	1.93
D-w	1	14,188	196.17	1.38
D-3	7	27,425	721.03	2.63
Total Lighting	427	6,436,376	$149,822.82	2.33
For Power				
2¢ flat rate	198	1,740,016	$ 34,800.32	2.00¢
P-1	5	65,978	1,351.64	2.05
P-2	1	740	91.61	12.38
P-3-13	14	1,715,593	24,194.76	1.41
P-4	1	16,140	402.54	2.49
P-7	2	210,400	5,015.80	2.38
P-9	1	38,138,090	433,035.90	1.14
P-15	12	1,757,360	28,203.36	1.60
P-17	2	117,000	2,157.82	1.84
P-30	1	10,476,800	73,198.94	.70
C-1	7	219,014	3,267.70	1.49
	244	54,457,131	$605,720.39	1.11
Special	15	......	5,639.79	...
Total	686	60,893,507	$761,183.00	1.25
Summary				
Lighting	427	6,436,376	$149,822.82	2.33
Power	244	54,457,131	605,720.39	1.11
	671	60,893,507	755,543.21	1.25
Traffic Control	15	......	5,639.79	...
Electric Total	686	60,893,507	$761,183.00	1.25

TABLE VI

PURCHASE OF GAS BY SCHEDULES 1936-37

FOR GENERAL USE

Schedule	No. of Accounts	Cu. Ft. Used	Cost	Cost per 100 Cu. Ft.
G-1	280	34,001,700	$ 21,116.12	6.21¢
G-2	7	2,201,400	1,328.36	6.03
G-10	1	85,600	104.05	12.15
Total	288	36,288,700	$ 22,548.53	6.21

		General Heating		
GH-1	60	38,978,700	$ 14,424.80	3.70
GH-2	2	1,162,200	465.11	4.00
Total	62	40,140,900	$ 14,889.91	3.71
		For Special Heat and Power		
GS-1	4	361,693,000	$ 57,504.25	1.59
GS-2	1	21,766,000	4,210.70	1.93
Total	5	383,459,000	$ 61,714.95	1.61
		Summary		
General Use	288	26,288,700	$ 22,548.53	6.21
General Heating	62	40,140,900	14,889.91	3.71
Special Heat and Power	5	383,459,000	61,714.95	1.61
Lamp Rentals	4	......	471.78	...
Total Gas	359	459,888,600 cu. ft.	$ 99,625.17	2.17
Total Electricity	689	60,893,507 kw-hr.	761,183.00	1.25
Total Electric and Gas	1,048		$860,808.17	

Note: This schedule shows total charges prior to adjustments.

The circle diagrams show at a glance the relative amounts of money expended for different civic activities. Of particular interest is the cost of administration, Table VII, which covers complete bookkeeping services, checking of bills and periodic analysis of all gas and electric accounts as well as complaint investigation, planning of improvements and upkeep of records of the street lighting system. This cost is but 1.2% of the total amount of money expended.

TABLE VII

ADMINISTRATIVE EXPENDITURES FOR STREET AND BUILDING LIGHTING 1936-37

Payroll and Supervision	$19,966.81
Transportation and Miscellaneous	956.76
Photostats and Blueprints	39.92
Materials and Supplies	43.65
Equipment	1,389.10
Total Administrative Expenditures	$22,396.24

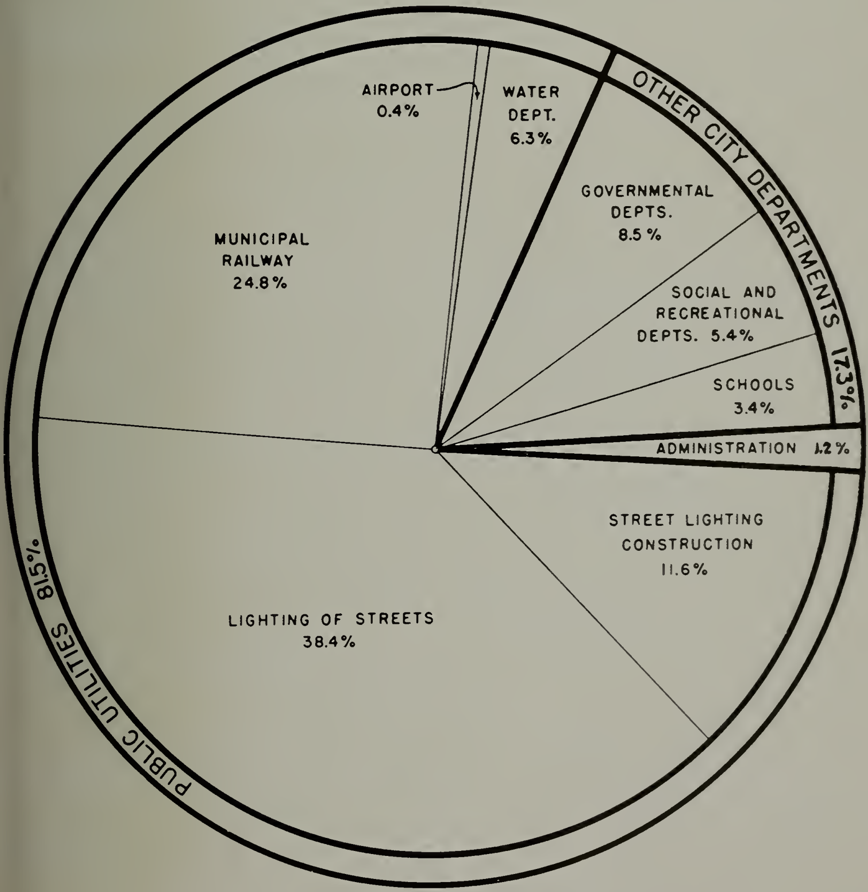
To fully meet the technical requirements of advantageous rate schedules it is often necessary to make certain changes in pipes, wires, or other City property. In the interest of economy, studies of several installations were made and as a result thereof the following work was completed during the past year:

Department	Investment Cost	Annual Saving
Health Center Building	$ 60.00	$ 265.00
Coit Tower	46.00	135.00
Veterans Building	30.00	1,300.00
Opera House	58.00	1,050.00
Water Department Building	590.00	385.00

A survey of the electric services of the City Hall has been made and it is estimated that an annual saving of $3,700 can be effected by making physical changes estimated to cost $4,000. Plans and specifications for this work are now under way and it is hoped to complete this work early next fiscal year.

At Sharps Park Golf Course the pumping of irrigation water was discontinued in favor of using surplus water from the County Jail, resulting in an annual saving of approximately $5,000. This necessitated a pipe line extension costing $1,735 for materials plus W.P.A. labor.

This department also sponsored and supervised a comprehensive test of the irrigation pumps in Golden Gate Park. The report of this test is now being drafted. Preliminary computations indicate that a saving of $3,000 per year can be made in the energy cost for this purpose. This saving will be over and above the $600 reduction effected last fiscal year by a similar test on part of the installations.



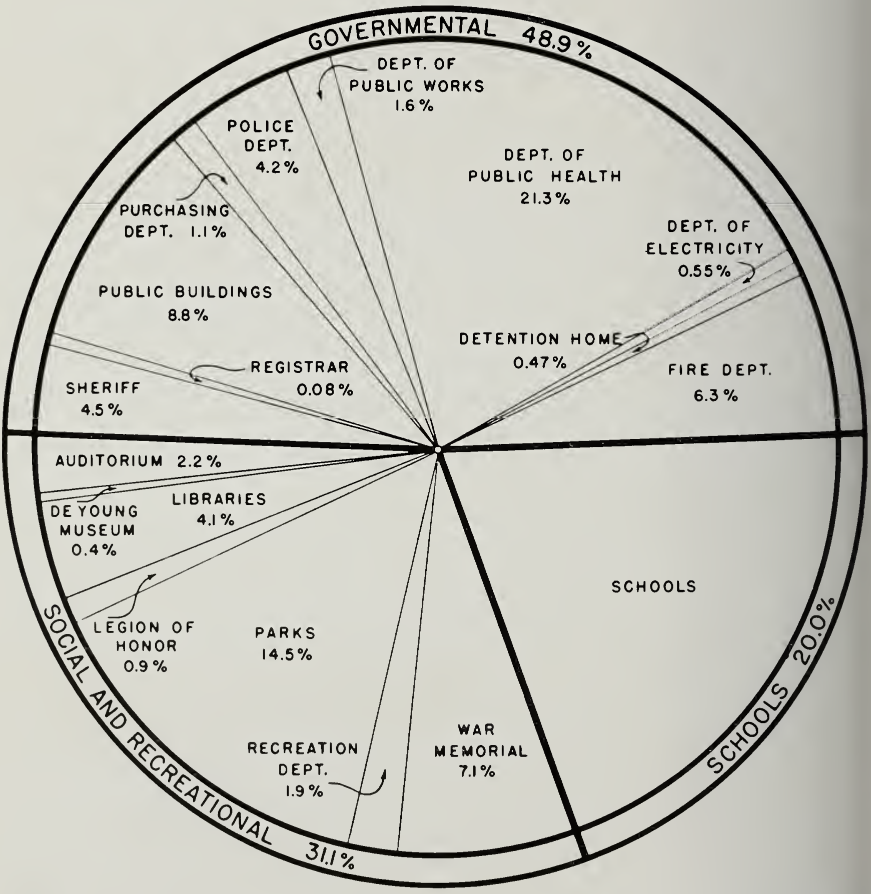
DIVISION OF ANNUAL EXPENDITURES FOR GAS AND ELECTRICITY BY FUNCTIONS.
100%=$1,755,156.54

A comprehensive electrolysis survey of the auxiliary high pressure water supply system is under way. This work is being done under work order for the Department of Public Works, with one man from the City Engineer's office assigned to this department to aid in the work.

Besides the above briefly outlined activities the department has aided and furnished engineering advice to several of the city departments in matters involving electrical engineering, some of which are mentioned below:

1—The Golden Gate International Exposition; electrical engineering in so far as the plans affect the ultimate use of the grounds for airport purposes. Also electrical requirements for pumping of water supply.

2—San Francisco Airport; supervision of the electrical engineering for the improvements now under way at the Airport.



DIVISION OF ANNUAL EXPENDITURES FOR GAS AND ELECTRICITY BY DEPARTMENTS OTHER THAN THE PUBLIC UTILITIES.

100%=$304,184.30

3—Water Department; air conditioning and rearrangement of electric services of building at 425 Mason Street and general advice in electrical matters involved in pumping and other activities of this department.

4—Recreation Department; plans and estimates and general advice in connection with lighting of playgrounds.

RAPID TRANSIT

The rapid transit plan proposed by the Public Utilities Commission in the report dated May, 1936, and mentioned in previous annual statements, has been under debate the larger part of the year. The Board of Supervisors was not willing to accept the plan without making careful investigation. To this end it has demanded that the Public Utilities Commission make reports on alternative means of relieving the present intolerable conditions. The Commission has defined the requirements of a satisfactory rapid transit system as follows:

1—Must furnish fast and adequate mass transportation to the greatest number of people convenient to points of origin and destination of a majority of the patrons.

2—Must decrease and not add to surface traffic congestion.

3—Must maintain and if possible improve property values.

4—Must provide for extension into any future scheme for rapid transit that can be anticipated.

Some fifteen or twenty proposals submitted to the Board of Supervisors and to the Public Utilities Commission were examined and reports made to the Supervisors. None of the plans other than that of the Public Utilities Commission was capable of accomplishing the results now urgently demanded. The best of the proposals offered but questionable temporary relief requiring the eventual adoption of a subway plan.

On May 11, 1937, a supplemental report was submitted by Manager of Utilities E. G. Cahill. This modified the original estimate to the extent that $6,000,000 in interest during construction was deducted and a definite sum of $2,550,000 was added for fourteen crosstown bus lines extending the service of the railway lines operating through the subways recommended in the May, 1936, report. There was also added to the Mission route a one mile extension for the purpose of giving direct service to the new Junior College. This resulted in the original Public Utilities Commission recommendation for rapid transit being reduced from $52,700,000 to $49,250,000.

The constant discussion of rapid transit required the department to prepare many pages of reports and data. A gradually increasing public interest demanded many public appearances before civic organizations and other bodies during the year. The growing interest in the subject indicates that the Board of Supervisors will take action to present the subject of rapid transit to the voters in November.

In the past year Market Street congestion has increased very rapidly. This increase is in no small way due to additional automobile traffic which has been brought into San Francisco by the completion of the San Francisco-Oakland and Golden Gate Bridges. This congestion has materially added to the time required to get street car patrons out of the downtown district during the evening rush hour. A check made by the Manager of the Municipal Railway in March, 1937, shows that the average speed of street cars from the Ferry Building to Kearny

Street during the evening rush hour was 2.37 miles per hour as compared with 3.55 miles per hour in March, 1936, and a scheduled speed of 7.1 miles per hour. The present low speed necessitates that more than 25 minutes be consumed in traveling a mile downtown as compared with six minutes in residence districts and a reasonable walking speed of a mile in fifteen minutes. Conditions are getting worse rather than better.

The number of cars now provided for the present peak hour crowd cannot be increased without further slowing those already in service. The present time required to travel from the Ferry Building to the ends of the K, L, and N lines at the peak of travel is nearly an hour. Similar travel time on all other routes is increasing to equally unsatisfactory lengths. One will be able to ride on the high speed trains from the Plan X terminal of the Bay Bridge to East Bay cities in between 30 and 40 minutes. The morning and evening trains from Third and Townsend Streets cover the 30 miles to Palo Alto in 45 minutes. Local residents are finding that quicker and more satisfactory service is being given those who live outside San Francisco than to those who make their homes here. For the best interests of San Francisco this condition must be corrected at once, particularly in view of the fact that present facilities will not permit of further expansion. The situation is serious and definite action cannot be postponed without permanent injury to our City.

The Public Utilities Commission has availed itself of the services of the W.P.A. organization, which during the year completed a surface and sub-surface survey of the obstructions which will be encountered on all of the subway routes and commenced making borings to permit of mapping the types of sub-soil which will be encountered. This latter data was available in satisfactory form for the preparation of the estimates of cost, but the details furnished by these borings will permit subway contractors to submit with safety bids of advantage to the City.

MUNICIPAL RAILWAY ENGINEERING

Reconstruction

Two railway jobs of importance were under way toward the end of the fiscal year. One of these under Municipal Railway Contract No. 165, was the replacement of the outer tracks on Market Street from Geary to Sutter Street. This contract was awarded on May 24, 1937, to Eaton & Smith for $30,589.69. To avoid interference with traffic, it was necessary to do this work at night. During the hours of work the Municipal cars were diverted over the tracks of the Market Street Railway Company. The work is proceeding satisfactorily and probably will be finished during July, 1937.

Extension Taraval Street Line

An extension of the "L" line cars from near the end of Taraval Street to Fleishhacker Playfield has been under consideration for a long time and is now being done by the Works Progress Administration.

The route is from Taraval Street along Forty-sixth Avenue southerly to Vicente Street, westerly to Forty-seventh Avenue, southerly to Wawona, easterly to Forty-sixth Avenue and returning northerly along Forty-sixth Avenue to Taraval. As the track on Wawona Street is but a short block from Sloat Boulevard, this new loop will give ready access to Fleishhacker Playfield.

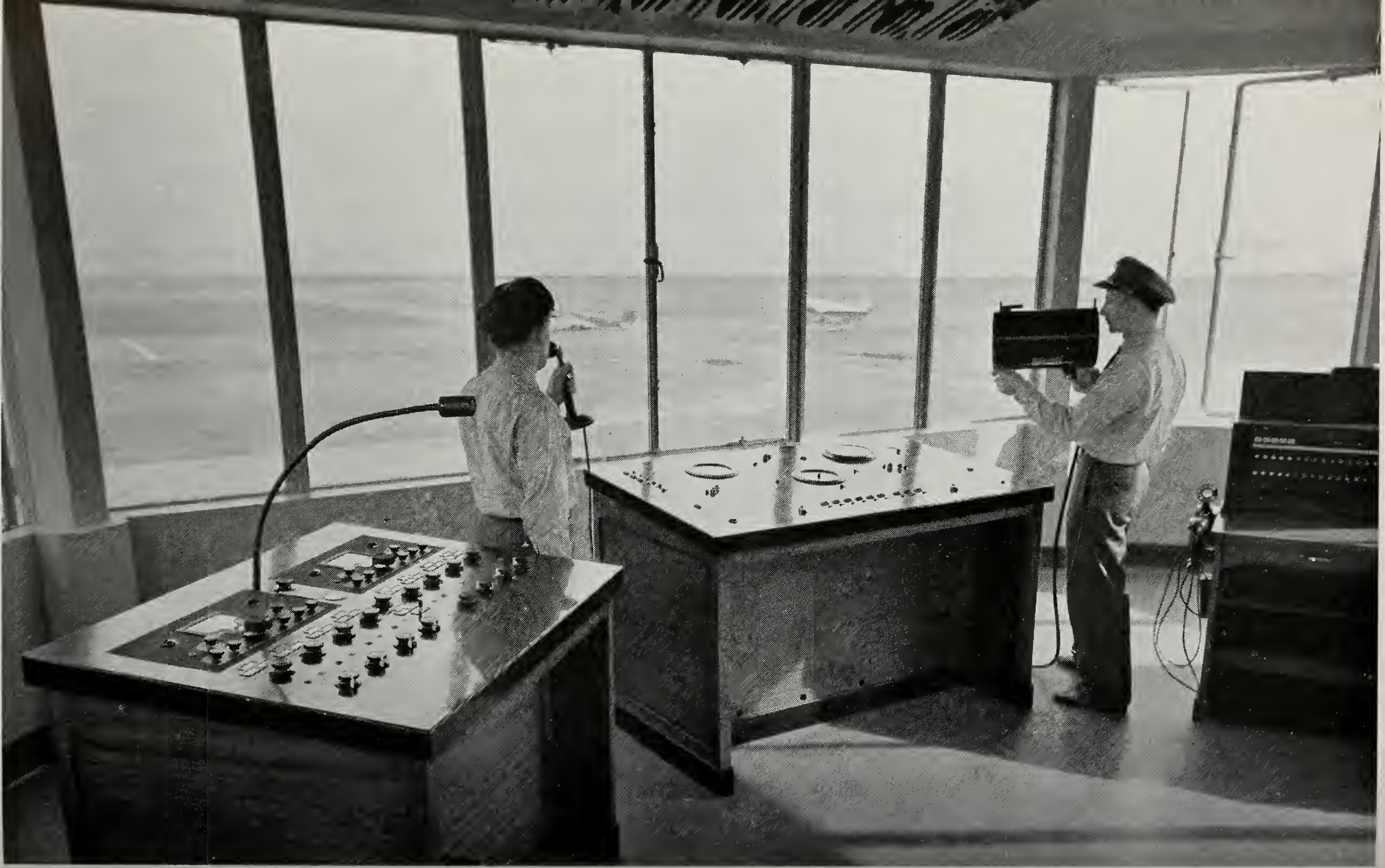
The Municipal Railway is supplying the track materials and poles and installing the trolley wire. All other material and labor is being furnished by the W.P.A. It is expected that this work will be completed early in the fall.

Bridge Terminal Tracks

In conjunction with the Toll Bridge Authority and the Market Street Railway, plans have been made for street car access to the Plan X terminal of the San Francisco-Oakland Bay Bridge. A double track one-way loop will be extended from Market Street to the terminal over First and Fremont Streets. A three track twelve car loading platform will be constructed at the mezzanine floor level of the station. The main pedestrian entrance to the terminal will be by a passageway under the street car tracks. This will separate pedestrian and street car traffic. While the loop plan is far from ideal, it is the only solution to a very difficult problem which can be secured without heavy expenditures by both the railways.

Because of the proximity of the terminal to the financial and office building district, the majority of bay train passengers will doubtless walk to and from the station. For this reason street car service to the terminal can be limited to but a fraction of the service now given to the Ferry loop. The greater number of the present cars used on Market Street east of First Street will still be required by San Francisco patrons and the remaining ferry boat passengers.

The new loop tracks will cost about $130,000 and be paid for by the two street railway lines.



AIRPORT CONTROL TOWER

All planes on the field and in the vicinity of the Airport are under constant control from this four-story tower. At left is radio control panel; center, lighting and field

SAN FRANCISCO AIRPORT

B. M. DOOLIN

Manager

FOREWORD

B. M. DOOLIN
Manager, San Francisco Airport

The definite objective of San Francisco Airport, namely that of becoming one of the leading landplane and seaplane ports of the world, was set forth in last year's fiscal report. Plans for the construction of a seaplane base to house Pan American Airways and the U. S. Coast Guard were discussed in detail, and the management's intention of enlarging and improving the landing field proper were outlined.

The past twelve months have been marked by steady progress in the fulfillment of these plans. Further development has come into the picture, made necessary by the phenomenal growth of the new industry of the air. A diagram showing a "Proposed Ultimate Development" plan for San Francisco Airport is included in this report, and will be referred to in more detail in another section. It calls for large scale improvements and field extensions, both on the Airport proper and at the seaplane base site. The field's prevailing wind, instrument-landing runway would be 6,000 feet in length, which is double its present length. San Francisco Airport will own 556 acres of land adjoining the field on the west, highly desirable for the location of aircraft industries.

Major Improvements Completed:

An effective pattern of runway paving has been completed, an improvement greatly needed since the field's inception; the semicircular seaplane harbor has taken shape as a result of solid earth fill on the tide flats to the north; and opposite the Airport entrance an imposing Administration Building has been constructed at a cost of $142,000. This structure embodies features of both beauty and efficiency.

The progress of the past year has been something more than can be set forth in descriptive terms. The City of San Francisco is proving itself an air-minded metropolis, determined to provide adequate facilities for the fast developing air transport industry.

Past Winter Season Trying for Airlines:

The airlines of America experienced somewhat trying times during the winter months of 1936-37. The cause was twofold. A wave of strikes paralyzed many branches of industry, thereby affecting travel and shipping in general; and several airplane accidents, due principally to inclement weather, were given widespread publicity, with the result that a shocked public became somewhat hesitant about using this means of transportation. Their occurrence followed one another within a comparatively short time, an unfortunate coincidence which in all probability will never happen again. At such times of public confusion, facts and figures mean little to the average traveler.

As a matter of statistics on airline accidents, the Bureau of Air Commerce publishes the following information for the year 1936:

Number of fatal accidents	10
Miles flown per fatal accident	7,330,384
Number of passengers carried	1,147,969
Passenger-miles* flown per passenger fatality	10,690,088

*A passenger-mile is equivalent to one passenger flown one mile.

Proposed "Ultimate Development Plan":

We have mentioned the fact that San Francisco Airport has an "Ultimate Development Plan."

But little vision is necessary to understand the future possibilities of air transportation. Here is an industry, still in its swaddling clothes, which has captivated the minds and fancy of people in every country of the world. Trans-oceanic air travel over the Pacific has become commonplace during the past year. Pan American Airways completed its through route to the Orient via Honolulu and Manila last April, and as the fiscal year is brought to a close this company is just completing its first one million miles of scheduled transpacific operation (exclusive of survey flight mileage). Transoceanic air service over the Atlantic is scheduled to begin within a few months. The first survey flight between America and England is set for July 3, 1937. These two main routes will make scheduled round-the-world air travel a reality, and open up markets, avenues of trade and cultural development never before known to mankind. And yet they are merely two pioneering trails, the sailing vessel trails of early American history, for the future scope of the air routes of the world would be difficult indeed to visualize.

San Francisco Vital Link in World Air Routes:

San Francisco is a vital link in these round-the-world air routes. With completion of its sea plane base it is to become the west coast base of Pan American Airways. An indication of the increased travel and trade that is expected may be gathered from the fact that the company has placed an order for six additional clippers, these new ones to be approximately twice the size and capacity of those in use at the present time. Four of these flying boats will be put into service on the Pacific and two on the Atlantic. They will carry 50 passengers and a crew of 10 on the schedules between America and Europe, and 75 passengers on shorter routes. They will weigh 42½ tons fully loaded, twice the size of the Clippers which are to survey Transatlantic air routes, and one-half again as large as the big Martin-type Clippers now in use on the transpacific route. These new ships will be of three-deck design, and powered with four 1500-h.p. Wright "Cyclone" engines, the most powerful aircraft engine, which has been in the course of secret development over the past two years. Top speed of the craft will be around 200 miles an hour, and with 50 passengers the cruising range will be over 3,200 miles.

Expansion of "Domestic" Air Routes Impressive:

Considering only our "domestic" air routes (those within the continental limits of the United States), we may quote from Department of Commerce statistics as regards their increased traffic. Representative data may be compared for the calendar years 1927, 1931, and 1936, and percentages of increase noted.

	Passengers Carried	*Passenger-miles	Express & Freight Pounds	Mail carried by Contractors Pounds
1927	8,661	No record	45,859	1,065,498
1931	469,981	106,442,375	788,059	9,097,411
1936	1,020,931	435,740,253	6,958,777	17,706,159
% of increase 1936 over 1927	11,688%	....	15,074%	1,562%
% of increase 1936 over 1931	117%	309%	783%	95%

*(A passenger-mile is equivalent to one passenger flown one mile.)

Such increases in less than a decade clearly indicate the rapidity with which the air transportation industry is growing, and the far sighted planning necessary if a major metropolis such as San Francisco is to keep abreast of aeronautical progress.

Comparing only the past two fiscal years we find the following figures for the "domestic" air routes of the nation.

	Passengers Carried	Passenger-miles Flown	Express (pounds)	Mail Carried (pounds)
Fiscal year 1935-36	848,981	353,972,551	5,321,203	Figures not
1936-37	1,063,480	460,753,103	7,463,688	yet published
% of increase	25%	30%	40%	

These figures are made the more impressive by considering the nationwide strikes which, during the past fiscal year, resulted in reduced air travel and shipping.

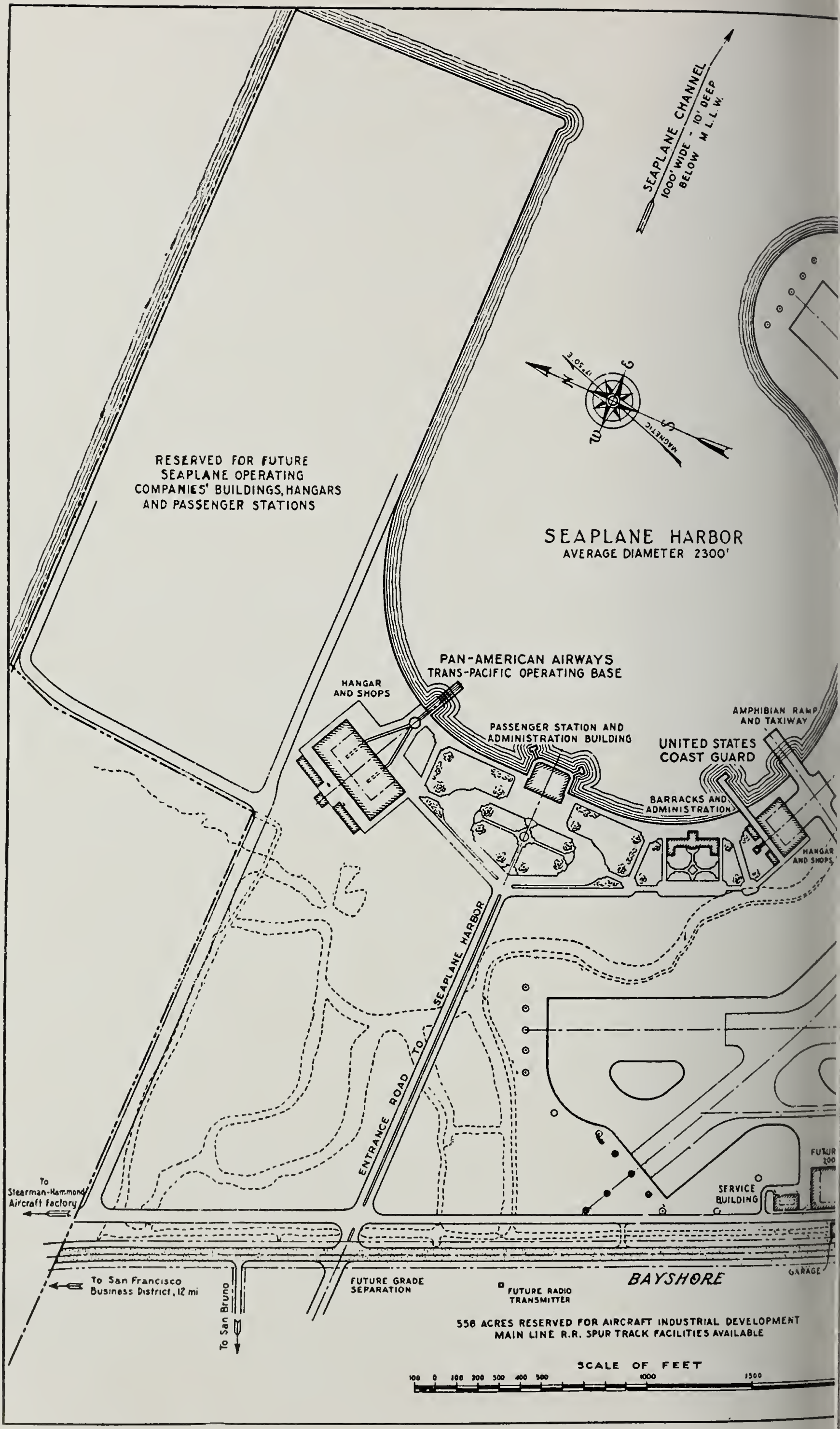
Bureau of Air Commerce to Improve Federal Airways:

Another encouraging factor as regards widespread confidence in the future of airline development and the aviation industry in general is the large fund set aside by the Department of Commerce for the establishment and improvement of air navigation aids. The appropriation act for the fiscal year 1938 provides $7,037,800 for this purpose. This expenditure should enable airline operators to show greater regularity of schedule and take advantage of improved safety measures.

Airlines to Demand Super-Airports:

The airlines of the nation are fully aware of the meaning of all these facts and figures. They have placed orders for larger and faster transport planes, huge ships that will be powered with four motors instead of two. They will carry much heavier loads than the present equipment and fly at speeds upwards of 200 miles an hour.

These new planes will not be able to land at many existing major terminals, for the reason that runway lengths are insufficient and airport facilities inadequate. Cities which intend to remain on the principal routes of the nation must make preparation to meet these demands. Paved runways approximately 5,000 feet in length must be provided and approaches to the field must be free from


RESERVED FOR FUTURE SEAPLANE OPERATING COMPANIES' BUILDINGS, HANGARS AND PASSENGER STATIONS
SEAPLANE CHANNEL
1000' WIDE - 10' DEEP BELOW M.L.L.W.
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MAGNETIC
SEAPLANE HARBOR
AVERAGE DIAMETER 2300'
PAN-AMERICAN AIRWAYS
TRANS-PACIFIC OPERATING BASE
HANGAR AND SHOPS
PASSENGER STATION AND ADMINISTRATION BUILDING
UNITED STATES COAST GUARD
AMPHIBIAN RAMP AND TAXIWAY
BARRACKS AND ADMINISTRATION
HANGAR AND SHOPS
ENTRANCE ROAD TO SEAPLANE HARBOR
SERVICE BUILDING
FUTUR
200
GARAGE
To Stearman-Hammond Aircraft Factory
To San Francisco Business District, 12 mi
To San Bruno
FUTURE GRADE SEPARATION
FUTURE RADIO TRANSMITTER
BAYSHORE
558 ACRES RESERVED FOR AIRCRAFT INDUSTRIAL DEVELOPMENT
MAIN LINE R.R. SPUR TRACK FACILITIES AVAILABLE
SCALE OF FEET
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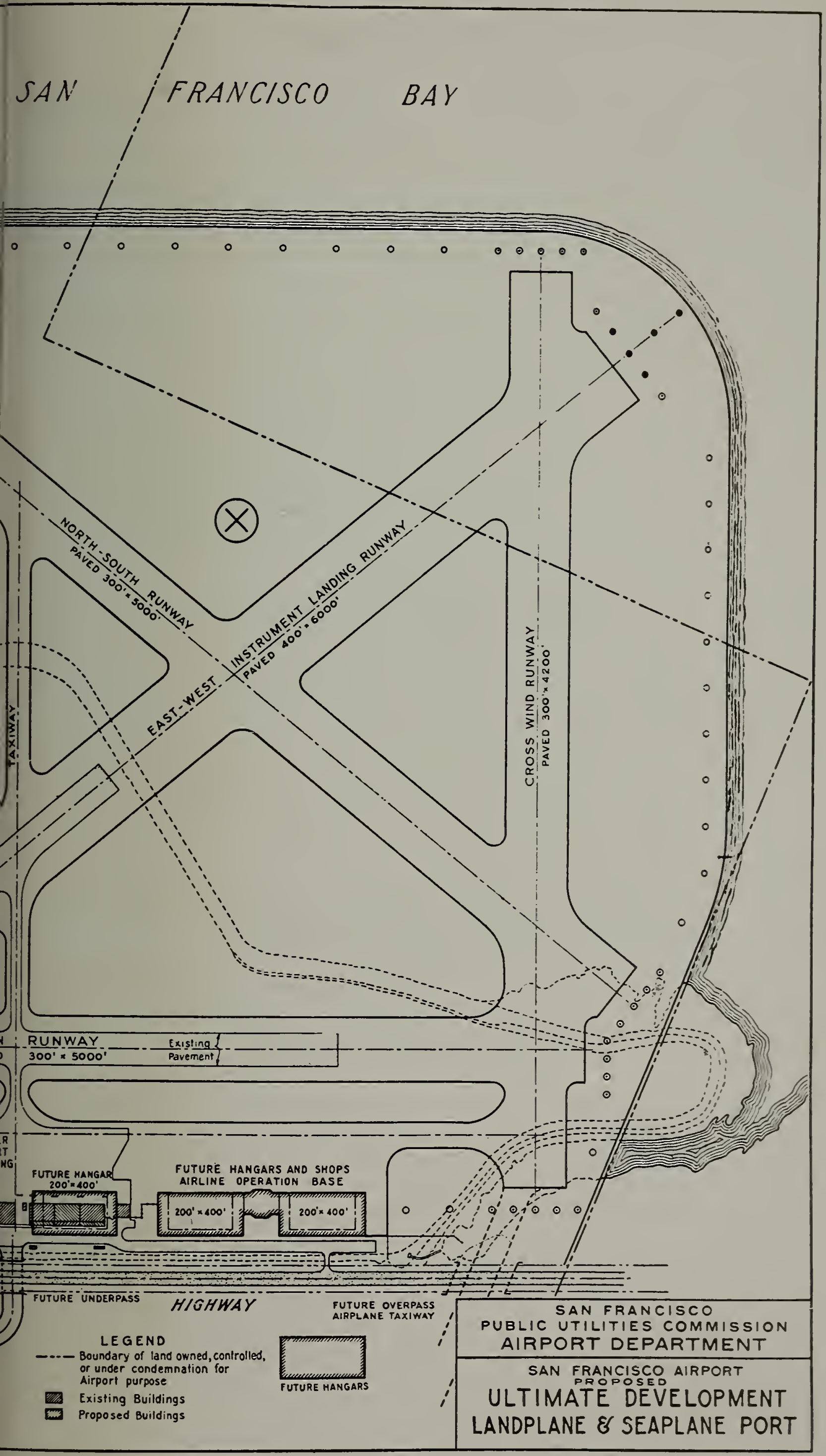


LEGEND

---- Boundary of land owned, controlled, or under condemnation for Airport purpose
▨ Existing Buildings
▭ Proposed Buildings

SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
AIRPORT DEPARTMENT

SAN FRANCISCO AIRPORT
PROPOSED
ULTIMATE DEVELOPMENT
LANDPLANE & SEAPLANE PORT

obstructions. Radio facilities and field lighting must meet traffic specifications, and airport development must keep apace of airline operation.

Careful planning is necessary to insure our City's retention of a major position in the expanding field of air transportation. We are destined by geographical location and by our business and cultural status to become the hub of air traffic in the West. For the past four years San Francisco Airport has been the western terminus of United Air Lines transcontinental route and the San Francisco terminal of its coastwise route. This company, which operates more air mileage than any airline in the world, has been the only air transport service operating in northern California since the cancellation of air mail contracts in February, 1934.

TWA to Begin Operations in September:

In last year's report mention was made that TWA, another of the nation's major airlines, was endeavoring to secure a permit to link San Francisco with its transcontinental southern route by inaugurating service between Winslow, Arizona, and San Francisco Airport. Negotiations have reached the point where it can be stated with absolute certainty that by September of this year the service will be in operation, and San Francisco will be the western terminus and base of this airline.

The route will pass over one of the most scenic regions of the world, including such sections as the Painted Desert, the Grand Canyon, Boulder Dam, and Death Valley (lowest point below sea level in the United States). Within the passengers' view will be the nation's highest peak—Mt. Whitney in the Sierras, towering 14,501 feet above sea level. With this route in operation, San Francisco will be directly connected by air with the Southwest and South, as well as eastern sections of the country.

It is only reasonable to assume that the next step in airline expansion in the West will be the direct linking of San Francisco with the extreme northern and extreme southern transcontinental routes.

Spread of Private Flying Indicated:

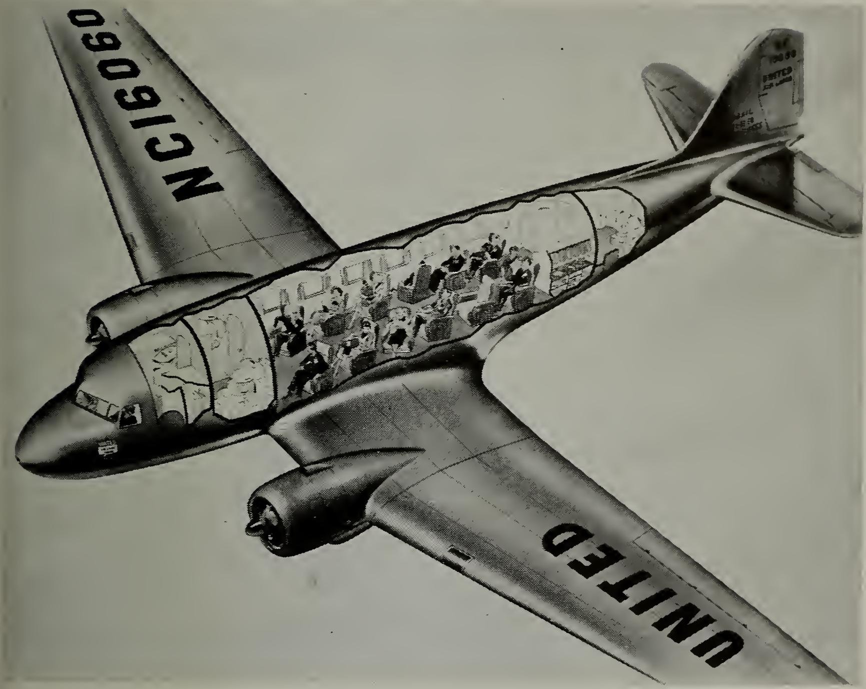
Not only must transport activity be taken into consideration, but the status of itinerant flying as well. Today some 35,000 Americans are learning to fly—a larger number than ever before. Department of Commerce statistics show that during the first three months of 1937, production of aircraft in the United States showed a 25% increase over the same period last year. The major increase in any one category occurred in the number of two-place cabin land monoplanes, the type most inexpensive to buy and easiest to fly.

Factory of Leading Fool-proof Plane Adjoins San Francisco Airport:

San Francisco Airport is the testing ground of the nation's leading fool-proof plane. Adjacent to the field on the north is the factory of the Stearman-Hammond Aircraft Corporation, manufacturers of the "Model Y," safest thing on wings by Bureau of Air Commerce tests, and easiest plane on the market for the beginner to manipulate.

U. S. Coast Guard to Establish Base:

San Francisco Airport has been selected for the establishment of a major U. S. Coast Guard Base. Several amphibion and seaplanes, and some sixty men, will be stationed at this new base, for which the federal government has appro-



MODERN AIR TRANSPORT
Cut away view showing de luxe "sky lounge." This is one of the types of planes which serve San Francisco Airport.

priated $750,000. Because of this facility being situated on our seaplane harbor, the channel to the harbor will be dredged by the U. S. Army Engineers, and will be kept in condition by them at a cost to the government of $12,000 annually.

Considering these many facts there can be little doubt as to the wisdom of San Francisco Airport's "Ultimate Development Plan." Not only will our Airport be a distinct asset to the business, civic, and cultural life of our City, and bring us prestige, but it will be a decided financial success from the standpoint of revenue as well.

TRANSPORT TRAFFIC

Air transport activity continues its upward trend. Figures showing substantial increases in traffic over the air lines of the nation were included in a previous paragraph of this report. Figures on transport operations at San Francisco Airport are set forth in tabulated form. The local data are entirely from the operations of United Air Lines, since this carrier has been alone in the air transport field of northern California since February, 1934.

United Air Lines operates between San Francisco and Vancouver, B. C., San Francisco and San Diego, and San Francisco and New York via Salt Lake City and Chicago.

OPERATIONS OF UNITED AIR LINES AT SAN FRANCISCO AIRPORT

(Comparative figures for past two fiscal years)

Month	Transport Planes (Arrs. and Deps.)		Per Cent of Increase-Decrease	*Passengers				Total Passengers Increase or Decrease	*Pounds of Air Mail Out Only		Per Cent Increase	*Pounds of Air Express Out Only		Per Cent Increase or Decrease
				1935-36		1936-37								
	1935-36	1936-37		Off	On	Off	On		1935-36	1936-37		1935-36	1936-37	
July	1,494	1,892	+27%	2,624	2,633	3,427	3,399	+30%	37,012	45,104	+22%	24,048	22,208	— 8%
August ...	1,500	2,042	+36%	2,673	2,775	3,636	3,759	+36%	37,201	48,186	+30%	29,098	24,542	—16%
September .	1,404	1,890	+35%	2,193	2,343	3,377	3,481	+51%	35,375	44,586	+26%	31,168	41,163	+32%
October ...	1,470	1,924	+31%	2,088	2,029	3,423	3,429	+66%	39,092	47,699	+22%	32,829	41,497	+26%
November .	1,326	1,846	+39%	1,649	1,779	3,172	3,249	+87%	37,951	40,578	+ 7%	35,277	36,302	+ 3%
December .	1,352	1,848	+37%	1,799	1,868	2,620	2,848	+49%	42,197	42,820	+ 1%	40,074	25,538	—36%
January ..	1,302	1,295	— 1%	1,449	1,553	1,232	1,074	—23%	35,155	43,834	+25%	47,015	15,529	—67%
February .	1,214	990	—18%	1,412	1,417	841	840	—41%	32,171	37,339	+16%	49,961	9,720	—81%
March	1,418	1,290	— 8%	2,113	2,248	1,592	1,646	—26%	41,941	52,286	+25%	22,290	13,704	—39%
April	1,378	1,282	— 7%	2,202	2,271	1,572	1,635	—28%	40,785	48,759	+20%	18,616	10,791	—42%
May	1,662	1,366	—18%	2,882	2,872	2,126	2,294	—23%	39,509	50,590	+28%	20,465	11,299	—45%
June	1,672	1,300	—22%	2,955	2,982	2,304	2,382	—21%	42,588	49,524	+16%	26,899	11,786	—56%
Totals	17,192	18,965	+10%	26,309	26,770	29,322	30,036	+12%	460,977	551,305	+20%	378,370	264,079	—30%
				53,079		59,358								

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*Does not include "through" passengers, or cargo.

(Explanatory remarks regarding certain decreases included in text of report under heading "Transport Traffic.")

UNITED AIR LINES MAINLINER

Interior of 21-passenger transport operated from San Francisco Airport.

Summarizing data on the San Francisco Airport traffic operations of United Air Lines over the past three years, we find the following results:

	1934-35	1935-36	1936-37	Increase 2-years	Increase or Decrease past year
Transport arrivals and departures..	14,600	17,192	18,965	30%	+10%
Passengers on and off (excluding "through")	43,643	53,079	59,358	36%	+12%
Mail (pounds out)*...............	348,246	460,977	549,408	58%	+19%
Express (pounds out)*............	247,508	378,370	264,079	7%	—30%

*(Mail and Express pounds "in" not weighed until last year.)

Explanatory Remarks Regarding Traffic Figures:

A few explanatory remarks are advisable regarding traffic decreases during the latter half of the past fiscal year. The comparative tabulations by months ndicate that certain months have shown decreases in planes, passengers, and express. Mail cargo showed increases throughout the year.

The causes of the decreases were twofold. One was the fact that a few airplane accidents occurred within a relatively short period of time, and the resulting publicity affected passenger traffic. The other cause of decreases was a general paralysis to many branches of industry, brought about by a series of strikes. The one most seriously affecting traffic figures at our own air terminal was the Hotel Strike in San Francisco. A general walkout occurred on May 1, 1937, and as the fiscal year is brought to a close the strike is still in effect. Under such conditions, business and pleasure trips are naturally postponed or avoided. The Airport management is confident that with the City's hotel system again in normal operation, traffic figures will mount.

The decrease in express figures was augmented considerably by still another factor. Large shipments of "Racing Forms" were being made from San Francisco to Los Angeles during the greater part of the 1935-36 fiscal year and until mid-December of the 1936-37 fiscal year. On December 18, 1936, however, the printing of these Forms was transferred to Los Angeles, and the shipments have since been reversed. Since incoming express is not weighed, and our tabulations show only the weight of outgoing express shipments, a large decrease has consequently been recorded.

Larger Transports Now in Use:

The fact that the number of transport arrivals and departures fell off somewhat during the latter half of the fiscal year was due in part to the airline's replacing 10-passenger planes with those of 21-passenger capacity. On the San Francisco-Los Angeles run, where the most frequent schedules are found, it was unnecessary to operate as many planes as before, and consequently the figures for "Transport Arrivals and Departures" decreased.

The 1936-37 air mail figures show increases throughout.

Our annual report a year hence will show San Francisco Airport operations' figures for another major airline, Transcontinental & Western Air, Inc. Early in September of this year, service will be inaugurated between San Francisco and Albuquerque, New Mexico, via Las Vegas, Nevada, and Winslow, Arizona, connecting at this latter point with the line's transcontinental route. San Francisco Airport will then be the western terminus of another major air route.

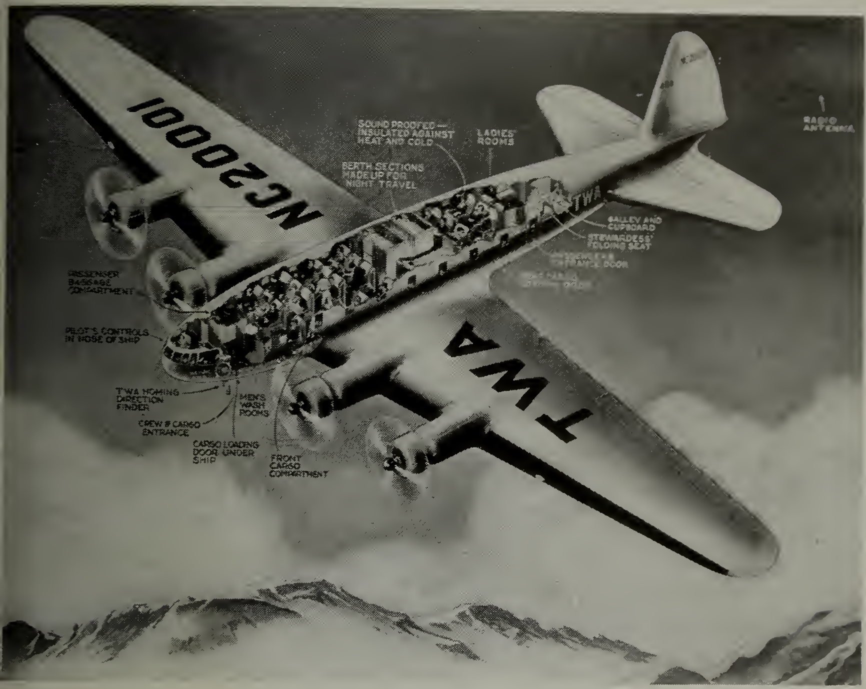
IMPROVEMENTS IN AIRPLANE SERVICE

Should a visitor of one year ago return to San Francisco Airport today he would be decidedly impressed with the improvements in airplane service. He would see in operation transport planes of twice the size of those in use heretofore; huge and sturdy, roomy and comfortable, impressively indicating the rapid advance of the new industry of the air. The 10-passenger planes of a year ago are being replaced by those of 21-passenger design, with spacious cabins of such ceiling height that a passenger need no longer "duck" his head when walking up and down the aisle. These 21-passenger "Mainliners" are used on the coastwise runs, between the Canadian and Mexican borders via San Francisco.

Over the longer transcontinental route, service even more luxurious is offered. The 21-passenger transport mentioned above is transformed into a deluxe "Skylounge," with 14 swivel lounge chairs replacing the 21 seats. These comfortable, reclining chairs may be turned about at will, enabling the passengers to observe from any desired angle the panorama of scenery beneath them.

"Skysleepers" Now in Operation:

A more recently inaugurated transcontinental service has brought into use the "Skysleeper." This pullman of the air leaves San Francisco Airport each


NC20001
SOUND PROOFED—INSULATED AGAINST HEAT AND COLD
LADIES' ROOMS
BERTH SECTIONS MADE UP FOR NIGHT TRAVEL
RADIO ANTENNA
TWA
GALLEY AND CUPBOARD
STEWARDESS' FOLDING SEAT
PASSENGER BAGGAGE COMPARTMENT
PILOT'S CONTROLS IN NOSE OF SHIP
TWA HOMING DIRECTION FINDER
MEN'S WASH ROOMS
CREW & CARGO ENTRANCE
CARGO LOADING DOOR UNDER SHIP
FRONT CARGO COMPARTMENT
TWA

TRANSPORT PLANE OF THE FUTURE

Cut away view showing type of transport plane now under construction for Transcontinental & Western Air. Will carry 33 passengers and a crew of 4.

evening at 6:45 o'clock. Twelve berths are prepared while in flight by the stewardess, and a comfortable night's rest is assured the passengers. The Skysleeper cabins resemble the conventional railroad pullman. The berths are 6½ feet in length and wider than twin beds.

The Skysleeper makes only three stops on its swift flight to the east coast. It lands at Salt Lake City, Cheyenne, and Chicago before completing its journey at Newark Airport. Flying time is 15 hours, 30 minutes, a reduction of 1¼ hours under schedules of a year ago.

In the design of these new planes every effort has been made to provide the passenger with comfort and luxury. A "Sky Room" or courtesy lounge is available to all passengers on the Skysleepers. Other features include two separate dressing rooms in addition to separate lavatories for men and women, hot and cold running water, electric razors, and electric kitchen for hot a-la-carte meals aloft. Soundproofing has been greatly improved, and the plane's construction permits of a wider range of vision from the windows. Only after making a flight does one fully appreciate the improvements offered by these new airliners.

Limousine Service Improved:

Keeping apace with improvement in airplane service, the Airdrome Transport Company's limousine service, carrying passengers to and from the Airport and downtown San Francisco, has likewise been improved. Two new specially

NEW AIRPORT LIMOUSINE

These automobiles operated by Airdrome Transport Company carry air passengers in comfort between San Francisco and the Airport.

built, 11-passenger limousines have been added to the fleet of luxurious cars. The
four rows of seats, each having its own doors for entry or exit.
wheel base of these new automobiles measures 17 feet. They are equipped with

PRIVATE FLYING

The era of widespread private flying is approaching. The younger generation the world over is thoroughly air minded, and with aircraft industries turning their attention to the design of smaller, safer, and more reasonably priced planes, the handwriting is on the wall.

Students learning to fly in the United States at the present time number around 35,000. Aircraft production during the first three months of 1937 showed a 25% increase over the same period of last year. The type most in demand was the 2-place, cabin, land monoplane.

California Leads in Flying Activity:

These facts should be more impressive to Californians, perhaps, than to the people of any other state. The reason lies in another set of Bureau of Air Commerce statistics setting forth the distribution of pilots, airplanes, and airports in the United States as of June 30, 1937. The figures show that California leads by far every other state in the Union in all three departments. The published tabulations are as follows:

As of June 30, 1937	Number of Aircraft (Licensed and Unlicensed)	Number of Pilots	Number of Airports
CALIFORNIA	1,074	3,174	186
Nearest Rival	867 (N.Y.)	1,609 (N.Y.)	131 (Tex.)
Total for U. S. and Territories	9,680	16,578	*2,361
Per Cent of total represented by California	11%	19%	8%

*No territories included except Alaska.

Looking into the future it is reasonable to assume that as private flying develops, San Francisco will be one of the favored spots of air tourists and flying business men. Our State is large in area (a good reason for the use of an airplane in getting around), and San Francisco, being a financial center as well as a city renowned for its atmosphere of charm and hospitality, will be a center for the private fliers of the future.

Future Air Terminal at Exposition Site:

In this connection it is well to consider the enviable position of the San Francisco municipality as regards airport facilities. Three years hence, with the International Exposition brought to a close, the "Treasure Island" fair site will be converted into a centralized air terminal for the use principally of privately owned planes and short shuttle lines from outlying cities. The Department of Commerce is already formulating plans for a ban on smaller planes at fields where the larger transports operate. Hence, by its strategic location the Treasure Island site offers a splendid solution to the problem. San Francisco Airport, with its seaplane facilities and enlarged landing area, will be the super-airport at which the heavy transports to and from distant points will operate, and the Island site will be used for all other types of flying. Schools for flight training, charter and scenic flight services, airplane agencies, as well as various types of private flying and shuttle air lines, will find quarters at this modern, centralized air terminal. A seaplane harbor measuring 1500 x 3400 feet is also included in the project.

The Administration Building is already under construction, being built at a cost of some $750,000. Two huge hangars, each measuring 255 x 335 feet, are nearing completion. Shop space extends along one side of each hangar for a distance of 291 feet, and increases the over-all width by another 32½ feet. Overall height is 59 feet, with door clearance in either end of each hangar measuring 42 x 200 feet. Cost of each hangar is some $400,000. During the Exposition these three buildings will be used for display purposes.

LOCAL FLYING

Airplanes permanently based at San Francisco Airport as of June 30, 1937, numbered 41. Classifying these according to their use we find the following:

24—Private use only
4—Flying School training
*4—Airplane Dealers' demonstrators
†6—Charter trips and scenic flights
1—Flying Club
2—Skywriters

41—Total

*One additional airplane classed under "Private Use," and one classed under "Flying School training," also used as demonstrators.

†One additional airplane classed under "Flying School training" also used for scenic flights.

Planes for Private Use:

Local interest in private flying continues its upward trend, with new and faster planes replacing older types. Several of the privately owned craft have made flights to remote sections of the United States, and to Canada and Mexico as well.

Flying Schools:

Three flying schools are in operation as the fiscal year is brought to a close. Summit Flying School operates two "Fleet" trainers; M. George Flying Service operates a "Kinner"; and Lyon Air Services, a newcomer to San Francisco Airport during the year, uses a new "Ryan S-T."

Airplane Agencies:

Nine airplane factories are represented at the Airport. The "Waco" plane is sold by Northern California Waco Distributors, Inc., the "Beechcraft" by Mouton & Clyde, Inc., which firm also has acquired the agency for the "Sea Bird Amphibion" built by Fleetwings, Inc., the "Stinson" by Franklin Rose Aircraft, Inc., the "Bellanca" by Frank Fuller, the "Rearwin" by Clyde Preston, the "Howard" and "Stearman-Hammond" by Howard Airplane Sales Company, the "Ryan" by Lyon Air Services.

Mouton & Clyde are also dealers for "RCA" radio equipment, and "Kollsman" instruments.

Charter Trips and Scenic Flights:

With completion and dedication of the two great San Francisco Bridges, scenic flights gained new impetus. From no vantage point in the whole bay area can these two imposing structures be so clearly and beautifully viewed as from an airplane.

As "Treasure Island" in the heart of San Francisco Bay develops into a spot of world wide interest, another artistic attraction will be added to the long list already awaiting the San Francisco sightseer of the air.

At present six planes are at the service of the public at the airport. This number will undoubtedly increase as the Exposition approaches. Four of the planes are available for long distance charter work. Flights can be made to any section of the United States or adjacent countries. Two of the ships may be quickly converted into air ambulances, with comfortable stretchers suspended in the cabins.

Flying Club:

The San Francisco Flying Club members now enjoy the use of a "Fairchild," 4-place cabin monoplane, a decided improvement over their equipment of a year ago. Nominal initiation fee and dues, and a very reasonable rental charge on the plane, make the club very desirable for flyers wishing to increase their "hours in the air."

Skywriters:

San Francisco Airport's veteran skywriter, Thor Polson, continues his smoke spelling at high altitudes. Over most every large outdoor gathering of people in the bay area or northern California, his white signs may be seen pouring from the chemical exhaust of his specially built plane.

A newcomer to this field of advertising is Ted Airheart, who began skywriting this summer.

OTHER TENANTS

Pacific Airmotive Corporation:

Pacific Airmotive Corporation, the coast's leading airplane sales and service organization, with northern California headquarters at San Francisco Airport, offers complete repair and parts service to the based and itinerant flyer. Any desired airplane part can be found in the stock of this organization. Any aircraft trouble, be it in engine or plane, can be detected and remedied in the Airport shops of this organization.

United Air Lines Offices:

United Air Lines maintains two offices at San Francisco Airport. The Operations office has a personnel composed of a Station Manager and seven Passenger Agents. The Reservations Department has a personnel consisting of a Manager and eleven Assistants.

Airdrome Transport Company:

Limousine service carrying passengers to and from each scheduled plane is operated by Airdrome Transport Company. A fleet of ten cars is available, two of which are new 11-passenger deluxe model limousines, specially built. The company also supplies service for itinerant aircraft.

Oil Companies and Mechanics:

Several mechanics, licensed for work on airplane engines and aircraft, are engaged at the Airport. Although employed by private airplane owners, they are available for work on itinerant planes.

Aviation fuel supply is sold by four oil companies, and can be obtained both day and night.

ENGINEERING AND CONSTRUCTION WORK

Construction Progress at San Francisco Airport:

During the fiscal year 1936-37 the total cost of the construction work at San Francisco Airport was $1,253,657.80, divided into $155,051.36 for contract work, $83,850.68 for sponsor's contribution to Works Progress Administration projects (W.P.A.), and $1,014,755.76 for Federal contribution to W.P.A. projects. The detail of expenditures is shown on the table following, and described in the sections below more particularly itemizing each project.

Due to the changes in Federal regulations made during the progress of the work, the accomplishments for the W.P.A. project fell short of expectations. None of the seaplane port harbor and channels dredging was done. About 112,078 cubic yards of seaplane port fill (including 84,000 cubic yards placed under contract as sponsor's contribution to W.P.A. project No. 6683) was placed during the fiscal year. It is now apparent that other means of financing must be found for the 2,500,000 cubic yards of dredging for the harbor and channel, for the remaining earth and rock fill for the seaplane port land areas, seawalls and breakwaters, and for the seaplane port ramps, buildings, structures, roads, walks, utilities, fences and landscaping. The same is true for many major improvements listed in approved W.P.A. projects for the landplane port, including culvert extension at the main entrance, permanent drainage control gates, lowering and reconstructing the main drainage pumphouse, construction of the NE-SW runway, completion of the service road to the north line of the airport property, lowering and improving the main power line, wharf for rescue boat, levee around the landing field extension to retain the material dredged from the seaplane harbor and channel, and other miscellaneous work.

Federal authorities have approved a project for government participation in the dredging of the seaplane harbor and seaplane channel, half the cost to be borne by the United States, with a limit of $137,000 to be expended from Federal funds, but no appropriation has been made for this purpose. The appropriation, if made, will be conditioned on the City's paying the balance of the dredging cost, providing an area, suitably enclosed, for disposal of dredged material, and donating to the United States a site on the seaplane harbor for a Coast Guard Station.

During the fiscal year the new Administration Building for the landplane port area was completed. This building has received much favorable comment and represents the latest advance in terminal buildings for scheduled air transport operation. The completion of this fine building will do much toward keeping San Francisco Airport in its present rank as a major airline terminal for transcontinental and coastwise airlines. However, substantial improvements to the landplane port landing field must be made in the near future in order to continue to attract the principal airlines when the new heavier and larger flying equipment now being manufactured is put into service. These improvements include increasing the length of runways from the present 3,000 feet to not less than 5,000 feet and preferably to 6,000 feet, installing drainage and lighting systems for the increased field size, providing extensive radio and other facilities as an aid to air navigation, and constructing additional large hangars and repair shops.

New Administration Building:

The new Administration Building was completed during the fiscal year, but not yet occupied. The building represents the latest advancement in arrangement and facilities for convenient and rapid handling of passengers, mail and express. Dignity and richness in appearance were preserved throughout the building, while at the same time moderate cost was maintained. The cost of the building was about $153,000 (subject to negotiation for final settlement), which amounts to about $0.30 per cubic foot, or about $5.28 per square foot of floor area.

The architectural treatment for both the interior and exterior is modernized Spanish. It houses the control tower, meteorological observation platform, weather department offices, main waiting room, ticket counter, telegraph and telephone offices, checkroom, restaurant, cigar counter, cocktail lounge, public toilets, large entry arcades and vestibules, covered mail and express loading platform, baggage room, facilities for handling mail and express, quarters for the field crew, offices for the airport manager and staff, offices for the airline operating companies and their staffs, offices for the administration of several other businesses allied to air commerce, and offices for certain governmental establishments.

The structure is 88 x 206 feet in plan, with a small north wing, and with provision for a future 86 x 66 foot wing extending to the north, similar in exterior appearance to the present south wing. The main waiting room is 40 x 80 feet in plan extending through two and one-half stories, and occupies the central portion of the main building. A four-story control tower, 25 x 25 feet in plan, dominates the easterly facade. A basement, 22 x 28 feet in plan, houses the heating plant and mechanical and electrical equipment.

SAN FRANCISCO AIRPORT CURRENT CONTRACT AND PROJECT DATA

FISCAL YEAR 1936-37

Cont. or Proj No.	Contract or Project Designation	Contractor	Contract Commenced	Time Allowed in days	Date of Completion	Amount of Bid or Estimate	Amount Paid or Expended During Fiscal Year	Fund
38	Administration Building (PWA Proj. 1132-10B)	Reed & Reed	6/24/36	174	5/30/37*	$141,799.00	$152,956.36*	Utilities Improvement
39	Earth and Rock Fill	T. O'Brien	5/ 5/37	100	Not Complete	38,500.00‡	33,090.75‡	Sponsor's Contract to WPA Proj. 6683
40	Field Lighting Control Board (PWA Proj. 1132-10D)	Lynn & Heffernan	5/25/37	67	Not Complete	2,095.00	2,095.00	Utilities Improvement
WPA	General Improvement of Airport (WPA Proj. 1727)	Day Labor Construction	12/ 3/35	365	3/15/37	42,000.00† 1,675,982.00	25,544.67† 827,337.57	City Federal
WPA	General Improvement of Airport (WPA Proj. 6683)	Day Labor Construction	3/16/37	140	Not Complete	109,843.00‡ 359,322.00	58,306.01‡ 187,418.19	City Federal
TOTAL VALUE OF WORKS CONSTRUCTED DURING FISCAL YEAR							$1,253,657.80	

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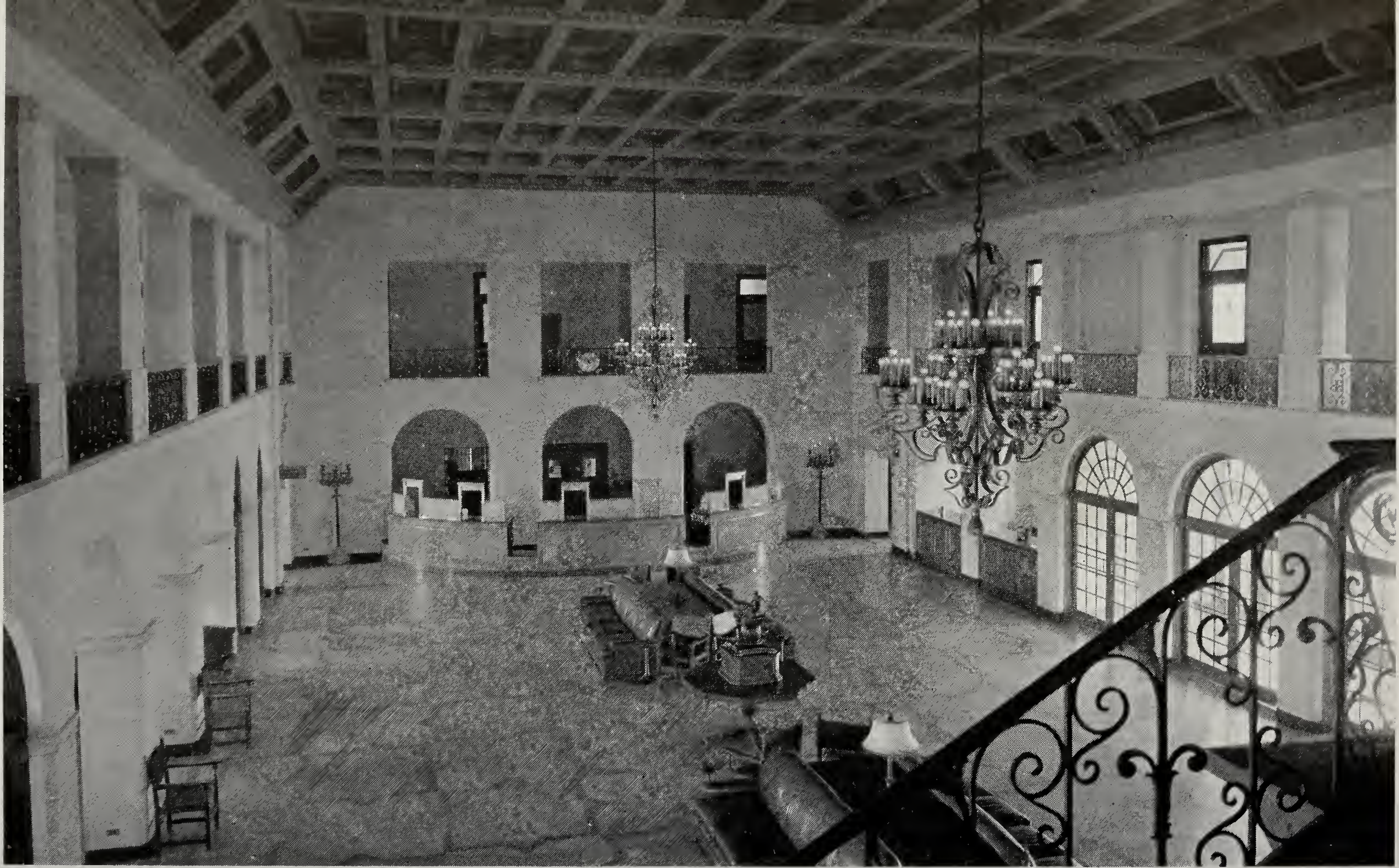
*The Administration Building was practically complete May 30, 1937, but payment of last progress estimate and retained percentage was withheld pending completion of certain minor items and pending final agreement on amount due for final payment. The Contractor has made several claims for payments in addition to that shown above.

†These figures are exclusive of $22,000 furnished by the Chamber of Commerce for the purchase of 160 acres of tide lands for seaplane port construction, and $105,000 for the purchase of land from the Mills Estate for the Airport.

‡Contract No. 39 is included as a portion of the sponsor's contribution to WPA project 6683. The total sponsor's contribution to WPA project 6683, including the $33,090.75 paid on Contract No. 39, was $58,306.01.



WAITING ROOM—AIRPORT ADMINISTRATION BUILDING

This new Administration Building provides the most modern facilities for passengers, air line and airport operation. It was constructed at a cost of $160,000.

The building is of fire resistive construction throughout. The foundation consists of concrete piers supported by deep timber piling extending through about 60 to 90 feet of soft, plastic blue clay, to a firm stratum below. The structural frame, walls and floors of the buildings are of reinforced concrete construction. Interior partitions are of metal stud and plaster. The main roof is finished in Spanish tile. Steel framing was used to support the roof over the waiting room and over the control room. The waiting room and vestibule floors are in four-color patterned terrazzo, arcade floors are in acid stained, ground-grooved concrete resembling colored quarry tile, corridor and public space floors are linoleum tile, and office floors linoleum. Marble travertite was used for thresholds, waiting room counter tops, main stairs and toilet stall partitions. Toilet walls and floors are finished in tile.

The completion of the building places the anticipated airport revenues above the operating expenses for the first time.

The finish of certain rooms and areas in the building was not included in the construction contract. These unfinished portions include:

(1) Third story of the tower,

(2) Eight offices and two toilets in the second story,

(3) Mail clerks' toilet, porters' toilet, porters' room, storeroom and postoffice in the first story,

(4) Checkroom counter, ticket counter grille, and scales,

(5) Wood trim, floor covering, painting, radiators, fixtures, bar and back-bar in the cocktail lounge,

(6) Coffee shop bar, back-bar and equipment,

(7) Kitchen equipment.

Field Lighting Control Board:

Plans and specifications were prepared, contract awarded, and work substantially finished, but not completed at the end of the fiscal year, for a field lighting and air traffic control system board. The control system is advanced beyond any heretofore constructed. The board has dead black bakelite top 36 x 60 inches in dimensions, mounted on a Philippine mahogany desk. The top has a plan of the airport with pilot lamps indicating all field flood lights in position and direction of beam, pilot lamps for green traffic control runway designation lights, boundary and obstruction lights, gate traffic control lights, police signal and street lights, switches for individual control of these lights and control of the siren and room lights. One dial oriented with the board shows instantaneous wind direction, and another dial shows the instantaneous wind velocity. A sensitive altimeter shows the barometric pressure to the nearest 0.01 inch of mercury, to enable the operator to furnish incoming pilots with data for accurately setting their altimeters before approaching the field. An electric clock is also mounted flush with the top of the board.

The cost of the board was $2,095.00, including furnishing, installation, and wiring from the control room to the basement.

Works Progress Administration Project No. 1727:

During the fiscal year the following work was accomplished under WPA project No. 1727:

(1) About 790,000 square feet of runway and taxiway pavement were laid, thus completing paving 150 feet wide and 3,000 feet long on the E-W and N-S

runways, two taxiways 50 feet wide with a total length of 3,200 feet, and the 1,250 x 288 foot apron. The pavement is generally 8″ emulsified asphalt stabilized earth and rock with a ½″ emulsified asphalt-bound armor coat.

(2) About 8,500 lineal feet of runway and field drains were constructed, including surface inlets. Drains are of vitrified pipe laid in gravel backfilled trenches. Inlets of concrete with cast iron grates and frames are spaced about 100 feet apart over the drained areas of the field.

CONTROL TOWER, NEW ADMINISTRATION BUILDING

(3) A tide gate and approach canal was constructed, in order to replace the one obstructed by the seaplane port construction. The new tide gates consist of four 36″ discharge pipes as compared with three effective 36″ pipes in the old

gate. The elevation of the gates was lowered and the intake improved, so that the new gates can discharge greater than 50% more water than the old gates. The new gate structure is of massive concrete construction with driven wood sheet piling cut-off walls. The replacement value of the gate structure, exclusive of the approach and outfall canals, is about $6,000.

(4) A reinforced concrete culvert composed of two 6′ x 4′ compartments, 124′ long supported on timber piling was constructed for the main drainage canal at the seaplane port approach road. The replacement value of the culvert, exclusive of earthwork, is about $8,200.

(5) The 12″ cast iron water main, connecting to the Water Department's 44″ steel pipes at El Camino Real and San Felipe Avenue, was completed and placed in service.

(6) The field lighting system was substantially completed. The new system includes 60 boundary and runway marker lights with prismatic globes, metal cones and concrete bases; 50 hazard and field limit lights; 5 concrete vaults housing transformers, oil switches for controlling floodlights, and which act as bases for the floodlights; four 6000-watt floodlights (2 of which were added under this project), and provision for six additional floodlights; a field lighting terminal building; several miscellaneous lighting units; 45,700 feet of underground power and control cable in 27,000 feet of duct lines; and 4,300 feet of underground telephone duct lines.

The field lighting terminal building is a reinforced concrete structure 36′ x 25.5′ in plan, of Spanish architecture with tile roof over concrete roof slab. It houses the main transformers and switching equipment for the airport, and provides space for a future gasoline-electric stand-by power plant. The replacement value of the building, exclusive of electrical equipment, is about $5,860.

(7) Only 26,078 cubic yards of seaplane port fill was placed during the fiscal year under this project, due to circumstances mentioned above.

(8) Much miscellaneous work was accomplished, including construction of service pipes, etc., to the new Administration Building and required for moving the old administration building; and the construction of walks, pavements, etc., in the vicinity of the landplane port buildings.

Works Progress Administration Project No. 6683:

A new WPA project estimated to cost $469,165, of which the sponsor's contribution amounts to $109,843, and the Federal contribution $359,322, was started March 15, 1937. At the close of the fiscal year the project was 30.95% complete and the sponsor had expended $58,306.01 and the Federal Government had expended $187,418.19.

The work accomplished includes improvement of canals and drainage in the airport lands located west of the Bayshore Highway, improvement of the landing field by extending the main runway (parallel to the highway) 1,000 feet with quarry-run macadam, improvements to the field lighting system, miscellaneous improvements, installation of radio receiving equipment, and placing of about 86,000 cubic yards of fill in the seaplane port area (placed under Airport Contract No. 39 as sponsor's contribution to the WPA project).

Engineering Work:

All engineering and architectural work for the airport was done by the Bureau of Engineering of the Public Utilities Commission, of which Mr. L. T.

McAfee is chief engineer, Mr. L. W. Stocker is chief civil engineer, and Messrs. George D. Burr and A. J. Wehner are respectively designing engineer and construction engineer for the airport work.

WEATHER DEPARTMENT

Weather continues its obstinate work of making "muddy" the highways of the air at times. Its influence is gradually being lessened, but is far from being eradicated.

Complete weather service continues to be available to pilots operating from San Francisco Airport. Complete airway coverage of weather reports is received at the meteorological office each hour of the day and night over the Bureau of Air Commerce teletype. Reports extend from the Canadian to the Mexican border and eastward to Salt Lake City. The San Francisco Airport report is a part of these sequences. At six-hourly intervals a wider area is covered, the reports coming from the whole of the United States. Twice daily the weather chart extends out to sea, being prepared from radio reports sent by ships on the Pacific. Canadian and Alaskan stations are also included.

Upper Air Wind Reports:

Upper air wind reports informing the pilot of his best flying altitude are received four times daily from a large number of stations throughout the country. San Francisco Airport takes its own "balloon run" to determine upper air winds each morning at 10:00 o'clock and transmits it via government teletype to the airways.

Forecasts are received every six hours from the U. S. Weather Bureau Forecast Centers in the West, advising of changes expected during the ensuing eight hours. Forecasts for 36-hour periods are received morning and evening covering the five western states.

In addition to providing weather information the teletype is kept busy with reports on the conditions of landing fields, airway lighting, radio operations, and various navigational facilities. "PX" reports on itinerant aircraft keep close tab on the private flyer.

Weather Instruments:

The set of weather instruments in use at the meteorological office has been augmented by two during the year. A "microbarograph" has been put into service, recording by means of an ink trace on a revolving chart, small changes in air pressure. An "electrically aspirated psychrometer" has been purchased, which provides the most accurate measurement possible of the moisture content of the air—the familiar "relative humidity" reading.

An "odometer," an instrument for clocking electrically the wind velocity, has been ordered. Its reading will supplement and serve as a check on the reading of the elaborate self-recording, synchronous-motored wind system in use.

Records of the various meteorological elements are prepared, and filed for future reference or study.

TRAFFIC CONTROL TOWER

Traffic control in the air is annually becoming wider in scope and stricter in regulation. Bureau of Air Commerce Traffic Control Stations govern flights along

WEATHER DATA

Fiscal Year 1936-1937

	TEMPERATURES					PRECIPITATION		WIND		NUMBER OF DAYS			
	Average Daily Maximum	Average Daily Minimum	Average	Absolute Highest	Absolute Lowest	Total	Greatest in 24 Hours	Prevailing Direction	Average Velocity	Clear	Partly Cloudy	Cloudy	Rain (.01 or more)
1936													
July	70.0	51.4	60.7	77	48	0.01	0.01	WNW	14.4	24	6	1	1
August	69.9	51.5	60.7	79	47	Trace	Trace	NW	12.6	23	4	4	0
September	74.2	50.8	62.5	92	46	Trace	Trace	NW	10.7	26	3	1	0
October	71.2	49.1	60.1	84	42	0.21	0.21	WNW	9.1	15	11	5	1
November	65.0	42.7	53.8	79	37	0.06	0.03	WNW	5.3	14	12	4	2
December	56.5	39.9	48.2	66	34	3.98	1.44	WNW	5.1	12	6	13	12
1937													
January	48.8	34.2	41.5	53	25	4.07	1.27	E	9.0	14	8	9	17
February	55.9	40.7	48.3	65	34	4.81	1.32	WNW	9.7	10	6	12	13
March	60.4	45.1	52.7	76	40	6.78	1.76	WNW	9.1	8	8	15	15
April	60.6	45.0	52.8	74	40	0.67	0.41	WNW	12.6	16	7	7	7
May	64.7	47.2	55.9	78	41	0.05	0.05	WNW	14.3	16	10	5	1
June	70.3	53.3	61.8	92	46	0.20	0.19	WNW	13.1	11	10	9	2
Fiscal Year '36-'37..........	64.0	45.9	54.9	92	25	20.84	1.76	WNW	10.4	189	91	85	71

the various airways, and Airport Traffic Control Towers at the principal terminals govern traffic on and in the vicinity of the field.

At San Francisco Airport the work of Control Tower operators has become increasingly involved, as more and more radio equipped planes, private as well as commercial, call for flight instructions. Contacts made by an approaching plane include a first call when at a distance of some 15 miles from the field. At this time the pilot is advised of weather and wind conditions, landing direction, and the presence of other airplanes in the vicinity. When a short distance from the airport, he is given another check on the wind and "landing clearance." Once on the field he is given instructions for taxiing to the gates at the loading ramp or to the hangar apron.

A departing plane contacts the tower before leaving the apron, at which time he is advised of wind and traffic, and given taxi clearance to the runway. Once in a take-off position he is given clearance to leave the field.

Departing planes submit a complete "flight plan," indicating the altitude at which they will fly, (odd thousand-foot level when heading in an easterly direction; even levels in a westerly direction), cruising speed, radio frequency, route, and estimated time of arrival at destination. This information is flashed via teletype to other control stations along the route. In inclement weather a "clearance" for the flight must be received before departure.

New Airport Control Tower to House Latest Equipment:

San Francisco Airport's Traffic Control Tower in the new Administration Building will be second to none in equipment and efficiency. The octagonal-shaped room is glass enclosed on all sides, permitting unobstructed vision in any direction. It measures 25 feet between walls, affording ample room for operators, control desks, and radios. Some $8,000 worth of radio equipment will be installed, most of the radio receivers being operated by remote control from buildings across the Bay Shore Highway. Continuous listening watch will be maintained on the airline frequencies, itinerant aircraft frequencies, and three all-wave receivers will be on hand for special use.

The Traffic Control Panel, a large desk placed directly in front of the operator, is especially designed for use at San Francisco Airport. Its top shows a large diagram of the field's runway plan, in the center of which is placed the wind direction indicator. Lighting switches for the various runways are placed directly on the runway diagram, to permit of no error in using the proper switch. Conveniently encased in the desk top are the wind velocity indicator, sensitive barometer, clock, and the various switches governing boundary lights, obstruction lights, siren, etc. The panel is of ingenious design and permits of great simplicity of operation.

To the left of the operator will be situated the Radio Control Desk, and to his right will be placed a service desk with telephones and writing facilities. Directly back of his position will be a large horizontal map of the immediate area over which traffic control is exercised. The map will be mounted on a steel plate, permitting the use of magnetic markers to indicate plane positions.

Negotiations for Radio Beam Facilities:

Negotiations for the installation of two important radio facilities at San Francisco Airport will soon be under way. The desired navigational aids are a medium powered radio range, and an airport localizer, the two to operate in conjunction with one another in guiding pilots to a landing or take-off under conditions of low ceiling and visibility.

The proposed radio range would be installed and maintained by the Bureau of Air Commerce, its location being at a point some 3½ miles southeast of the Airport. The localizer would be installed and maintained by the Airport itself.

The radio range would guide the pilot flying "blind" to the airport runway approach, at which time the localizer beam would direct his course to a landing on the runway. On the take-off the localizer would guide the pilot up through the clouds to a safe turning altitude, at which time the radio range would set him on the proper course to his destination.

That the localizer will be installed is a certainty. As regards the radio range, there is good reason to feel confident that the Bureau of Air Commerce will approve the proposal, since over eighty per cent of bay region air transport traffic (passengers and cargo) originates or terminates at San Francisco Airport.

ACCIDENTS

San Francisco Airport has long enjoyed a splendid record with regard to an extremely small number of airplane accidents. During the past fiscal year that record has been maintained. On no occasion did an accident involving even minor injury to pilot or passenger occur in the operation of aircraft based at this field, nor to itinerant aircraft. One serious transport accident occurred near the airport, however, through a most unfortunate incident. The plane was inbound from Los Angeles, and while circling over the bay northeast of the Airport, fell into the water. The official Bureau of Air Commerce report on the cause, ends with the following statement:

> "It is the opinion of the Bureau of Air Commerce that the probable cause of this accident was accidental jamming of the elevator controls as the result of a microphone being inadvertently dropped and lodging in such a position that the crew was unable to prevent rapid descent of the airplane."

That the plane should have been preparing for a landing at this terminal when the accident occurred was an unhappy coincidence.

Statistics on Safety at San Francisco Airport:

The number of passengers who have boarded or deplaned United Air Lines transports at San Francisco Airport during the past four fiscal years is 184,192. (This figure does not include "through" passengers.) On no other occasion has an accident involving even minor injuries occurred. The same record holds for that Company's operation at our terminal prior to the four year period cited, but passenger figures are not available.

Rules and regulations of the Bureau of Air Commerce regarding field operations and traffic control are enforced by the management, and on specified days each month the Bureau's inspectors visit the Airport for purposes of aircraft inspection and student examinations.

PERSONNEL

The San Francisco Airport personnel during the 1936-37 fiscal year was made up of a Manager, Mr. B. M. Doolin; an Assistant Manager, Mr. H. S. Messersmith; a Meteorologist, Mr. E. P. Sullivan; a clerk stenographer, a meteorological computer, 13 to 14 airport attendants, and 2 janitors.

Intelligent, alert employees must make up the personnel of a modern air terminal. Their responsibilities are yearly becoming greater, considering the increased traffic and the higher costs of airplanes in use. The giant airliners frequenting San Francisco Airport daily are priced at some $110,000.

At least 75% of the personnel are licensed radio-telephone operators, and 7 are licensed airway weather observers.

As a cooperative measure with the American Red Cross, most of the personnel hold accredited First Aid cards, in order that assistance may be given the victims of automobile accidents along the Highway paralleling the Airport.

PUBLIC UTILITIES COMMISSION

SAN FRANCISCO AIRPORT

INCOME ACCOUNT

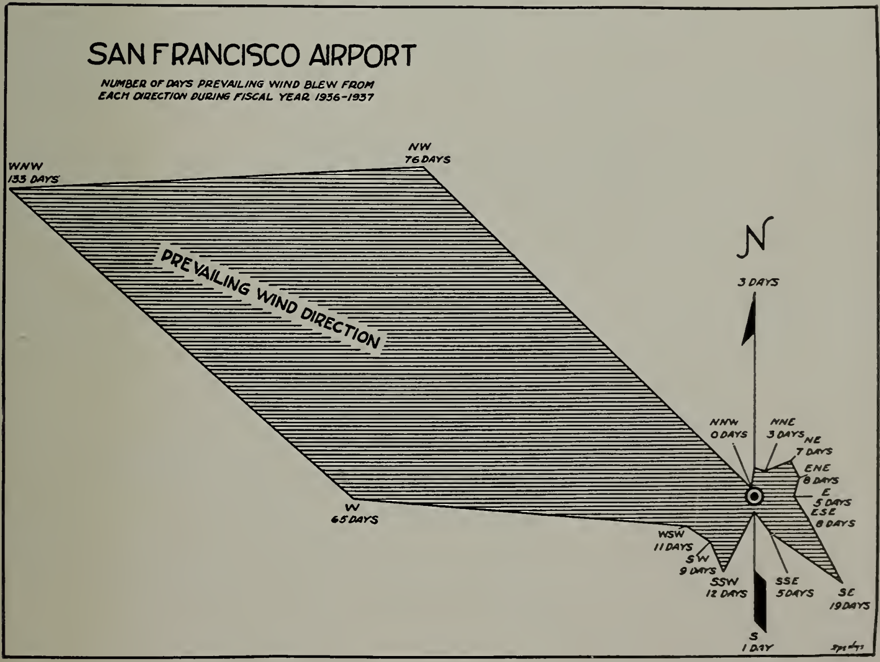
	Fiscal Year Ended June 30	
REVENUES	1937	1936
Hangar—Rentals	$10,499.82	$10,161.81
Office—Rentals	1,418.00	1,069.00
Shop—Rentals	3,015.80	2,498.80
Restaurant—Rentals	......	720.00
Passenger Tax	2,981.20	2,668.10
Handling Charges	11,386.50	10,354.50
Telephone Income	2,672.34	2,171.03
Miscellaneous	1,706.15	5,456.32
Total Revenues	$33,679.81	$35,099.56
EXPENSES		
Salaries—Permanent	$16,427.84	$13,477.08
Salaries—Temporary	21,560.80	20,590.40
Heat, Light and Water	6,914.24	6,827.78
Telephone, Telegraph and Postage	5,216.88	5,066.11
Materials and Supplies	3,058.01	4,235.48
Maintenance and Repairs	1,764.29	1,658.69
Taxes	1,966.19	2,088.32
Uncollectible Accounts, Estimated	600.00	900.00
Miscellaneous Contractual Services	4,435.45	444.99
Traveling	544.40	460.43
Miscellaneous Expense	1,040.59	408.20
Depreciation	9,600.00	9,600.00
Bond Interest	5,026.67	3,024.58
Pensions	1,187.49	1,109.58
Total Expense	$79,342.85	$69,891.64
Net Loss	$45,663.04	$34,792.08

SAN FRANCISCO AIRPORT

SURPLUS ACCOUNT

For the Year Ended June 30, 1937

Balance July 1, 1936			$1,218,120.84
Add:			
Contributions from General Fund	$203,148.17		
Federal Grants Receivable	2,932.08		
Contribution from San Francisco Water Department (Buick Auto)	20.00		
Contribution from San Francisco Chamber of Commerce (Land)	22,000.00		
Adjustment of Reserve for Bad Accounts as of June 30, 1936	1,131.46		
Miscellaneous Audit Adjustments as of June 30, 1936	2,114.60		
Miscellaneous Adjustments	295.97	$231,642.28	
Less:			
Loss for Year Ended June 30, 1937	$ 45,663.04		
Contribution from General Fund—Audit Adjustment as of June 30, 1936	183.92	45,846.96	
Net Increase of Surplus			185,795.32
Balance June 30, 1937			$1,403,916.16



SAN FRANCISCO AIRPORT

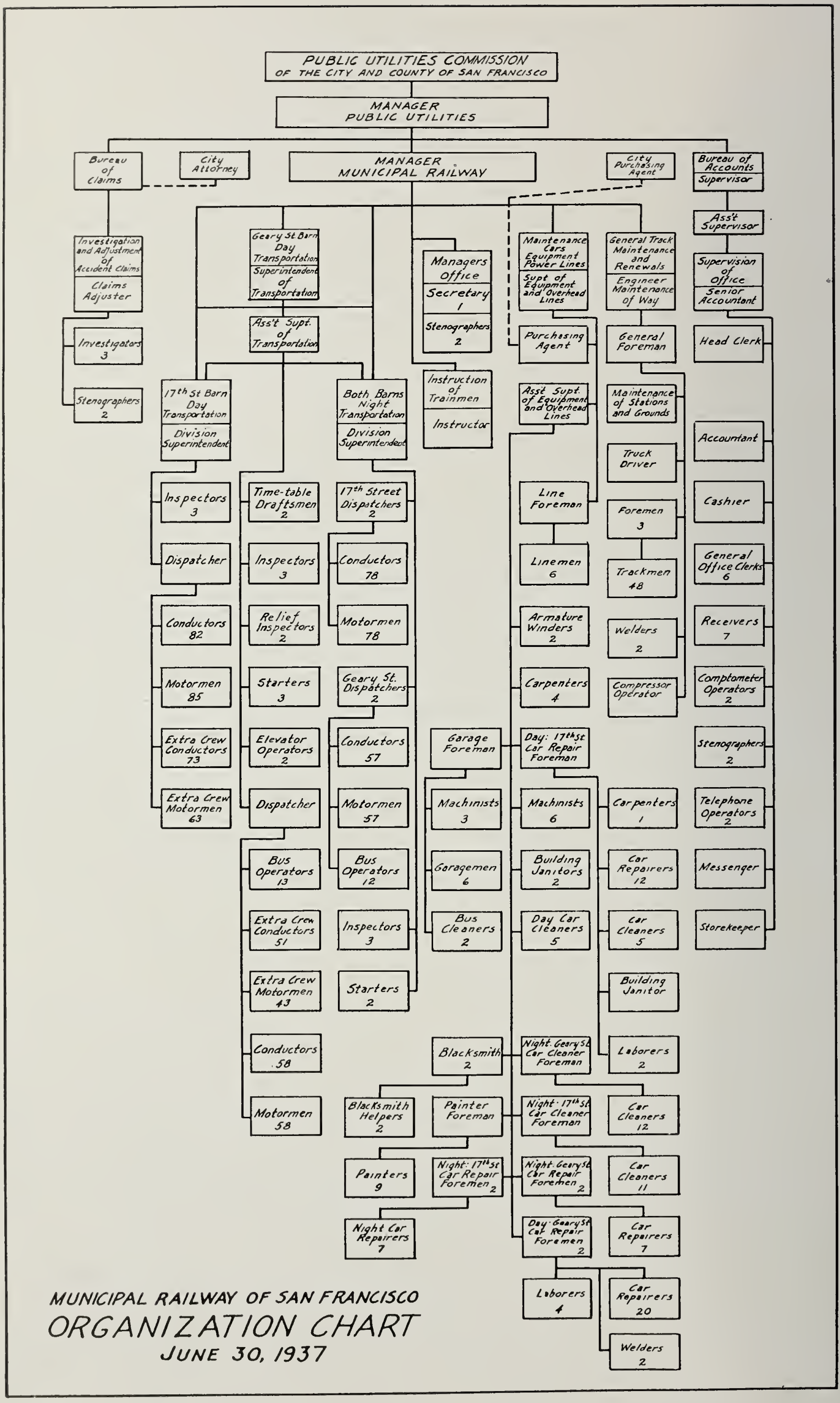
BALANCE SHEET—JUNE 30, 1937

ASSETS

Fixed Capital in Service:		
Land, grading, runway, etc.	$1,565,362.51	
Buildings	223,217.49	
Equipment	63,473.35	
	$1,852,053.35	
Less Reserve for Depreciation	55,299.92	$1,796,753.43
Cash:		
Operating Fund	$ 17,623.72	
Bond Fund, for Construction	12,469.70	
Bond Interest Fund	640.00	
Revolving Fund	200.00	30,933.42
Accounts Receivable:		
Federal Grants	$ 2,932.08	
Miscellaneous	7,559.91	
	$ 10,491.99	
Less: Reserve for Bad Accounts	4,489.77	6,002.22
Inter-Fund Accounts:		
Due Operating Fund from W.P.A. Projects—Airport		602.63
Deferred Charges:		
Encumbrances Outstanding	$ 1,184.73	
Materials and Supplies	746.66	
Prepaid Insurance	43.89	
Sponsor's Contribution for Preliminary Expenses—P.U.I.F. and W.P.A. Projects	13,100.00	15,075.28
		$1,849,366.98

LIABILITIES

Bonds Issued December 1, 1933, for Construction of runway extension; Interest rate 4 per cent; due December 1, 1935 to 1938, inclusive, at the rate of $52,000.00 per year		$ 104,000.00
Bond Interest:		
Matured	$ 640.00	
Accrued—Not Due	346.67	986.67
Land Purchase Commitment:		
Purchase Price of Land, payable $105,000.00 per year, from September, 1930, to 1939, inclusive	$1,050,000.00	
Less Payment to Date	735,000.00	315,000.00
Accounts Payable:		
Warrants Outstanding	$ 3,518.09	
General Creditors	1,342.50	4,860.59
Deferred Credits:		
Purchase Order Commitments	$ 782.23	
Work Order Commitments	275.00	
Service Order Commitments	127.50	
Hetch Hetchy Construction Expenditures	15,636.57	
Hetch Hetchy Power Expenditures	130.28	16,951.58
Inter-Fund Accounts:		
Operating Fund Owes General Fund	$ 468.70	
Bond Fund Owes General Fund	2,918.48	
Operating Fund Owes Retirement System	207.81	
Operating Fund owes S. F. W. D.	56.99	3,651.98
Surplus (Details annexed)		1,403,916.16
		$1,849,366.98



MUNICIPAL RAILWAY OF SAN FRANCISCO
ORGANIZATION CHART
JUNE 30, 1937

MUNICIPAL RAILWAY OF SAN FRANCISCO

FRED BOEKEN
Manager

FRED BOEKEN
Manager, Municipal Railway

General:

The Municipal Railway at the close of this fiscal year on June 30, 1937, was in its twenty-fifth year of operation. The total income from all sources from December 28, 1912, to June 30, 1937, amounted to $75,776,472, which amount includes $5,481,000 received from sale of bonds, $1,524,942 contributed, $660,962 interest received on bonds owned and daily cash balances, $70,230 received as subsidy from the Board of State Harbor Commissioners, and $299,157 miscellaneous profit and loss items. Passenger and other revenue totaled $67,740,182.

The total expenditures from start of operations, December 28, 1912, to June 30, 1937, were $60,368,052, of which operating expenses amounted to $54,599,800, bond interest charges $4,078,601, payments for injuries and damages $1,599,749, and miscellaneous profit and loss charges $89,902. Bonds totaling $3,881,000 were retired out of a total of $5,481,000 issued.

Road and equipment purchased amounted to $10,853,094, of which $5,481,000 was derived from moneys received from bond sales, $4,420,651 from earnings and contributions, and $951,443 from the depreciation reserve fund.

Road and equipment retired totaled $864,296, leaving a balance of $9,988,798 on hand and in use.

At June 30, 1937, net cash, receivables and stores on hand, after deducting all liabilities, resulted in net free assets in the amount of $892,766.

In the twenty-four and a half years of operation, the Municipal Railway carried 1,680,950,094 passengers; passenger car and bus miles operated totaled 194,820,739, and car and bus hours operated totaled 20,290,449.

The net profit for the fiscal year ended June 30, 1937, amounted to $179,729, and indications are that future operations will result in a substantial yearly increase in net income. General business conditions in San Francisco continue to show a very definite trend upward, and the employment situation continues to show improvement.

Operating revenue for the year was $3,164,052, an increase of $91,444 or 2.98 per cent over preceding year.

Operating expenses (not including reserves or bond interest) amounted to $2,713,913, an increase of $39,063 or 1.5 per cent over previous year. While wage

PAINT SHOP

All Municipal street cars are regularly overhauled and repainted. More than 50 cars go through the Railway shops each year.

scales remained the same as in the previous fiscal year, increased car hours operated, higher material costs, and increased cost of power account for increase in expense.

Net income for the fiscal year amounted to $179,729 as compared with a net income in the preceding year of $121,957. In considering this net income it must be remembered that the Municipal Railway still maintains a wage schedule for per diem employees which is approximately 40 per cent higher than the average paid by private companies.

The number of employees as of June 30, 1937, was 1,139, an increase of fourteen from the same day in 1936.

Comparison of the budget estimate with actual results of operation for the fiscal year show a decrease in estimated receipts of $13,709 and a decrease in expenditures of $47,156, a net saving on the budget estimate of $33,447.

Bonds in the amount of $100,000 were retired.

The only indebtedness now against the Municipal Railway property is the Municipal Railway bond issue of 1913, originally issued for $3,500,000, of which $1,600,000 is still outstanding, this amount to be amortized at the rate of $100,000 per year for the next sixteen years.

The fare on the Municipal Railway remains at 5 cents with free transfer privilege and was the same as that charged by the two privately owned street railways operating in San Francisco during the fiscal year ended June 30, 1937. However, subsequently and as of July 6, 1937, the larger of the privately owned railway companies was granted a 2 cent transfer charge by the California State Railroad Commission.

The retention of the 5 cent fare has resulted in a saving of approximately $7,000,000 per year to the car riders of San Francisco, based on the average rate of fare of 8.33 cents paid to street railways in the United States.

With the completion of the two bay bridges, which are now open for auto traffic, traffic conditions in San Francisco have become increasingly more congested. This will be still further augmented when rail operation on the San Francisco Bay Bridge is inaugurated later in 1938. Several surveys and preliminary investigations on rapid transit have been undertaken, the costs of which have been borne in part by the Municipal Railway. The results of surveys made indicate conclusively that the solution of San Francisco's traffic problems lies in a system of subways, surface lines, and connecting bus lines. Therefore, in conformity with traffic engineers' recommendations a bond issue will be voted on in November, 1937, authorizing a bond issue of $49,250,000 to construct subways and establish bus lines in accordance with plans prepared by Mr. E. G. Cahill, Manager of Utilities, and approved by the Public Utilities Commission.

Passage of this bond issue and construction as planned should solve San Francisco's traffic problem.

Auditing and Accounting:

The accounts of the Municipal Railway are maintained strictly in accordance with the requirements of the State Railroad Commission, and Section 64 of the Charter of the City and County of San Francisco. The centralized control system installed by the Controller has been merged with these accounts, with the result that no obligation may be incurred without the prior certification of the Controller that funds are available to discharge said obligation when it becomes due.

The Municipal Railway cash balance was verified in the Treasurer's office as of June 30 and, with the exception of settlements for injuries and damages, provision has been made for all ascertained liabilities outstanding on June 30, 1937.

The activities of the Municipal Railway are audited currently by the railway's auditing staff.

Maintenance of Track and Roadway:

The usual high standard of maintenance in effect on the Municipal Railway properties has been maintained during the last fiscal year, with the result that over 1,000 lineal feet of single track was reconstructed, 33,975 square feet of concrete paving base placed, and 93,572 square feet of asphalt paving renewed.

Two major reconstruction jobs and one major new construction job were undertaken during the year as follows:

Reconstruction of Market Street tracks—Geary to Sansome Streets. 2,200 feet of single track was reconstructed and 10,000 square feet of asphalt paving on concrete base replaced under contract No. 165.

Total estimated cost of this work	$46,700
Portion completed to June 30, 1937	22,000

Resetting trolley poles—Van Ness Avenue, Market Street to North Point Street. 248 concrete poles were moved back and reset due to widening of Van Ness Avenue under W.P.A. The Municipal Railway expended $17,386 in connection with this work. This job was completed as of June 30, 1937.

NEW TRACK WORK

Picture shows Market Street east from Third Street. The Municipal Railway tracks were reconstructed during the past year.

New construction—Line "L" extension to Fleishhacker Pool. During the fiscal year construction on the line "L" extension to Fleishhacker Pool was started and was 90 per cent completed as of June 30, 1937. This construction was done by W.P.A. forces, the Municipal Railway furnishing certain engineering and supervision services and labor on overhead wiring. Part of materials used was also furnished by the Municipal Railway. This extension is 0.90 of a mile of single track (round trip distance). Rail and poles removed from the Market Street Railway Company's Gough Street line were used on this job. The total cost of this work is estimated at $65,000, the Municipal Railway's proportion being approximately $23,000.

Minor track replacements costing $6,000 were completed.

During the year 0.85 of a mile of trolley was replaced at a cost of $748.

Transportation:

The usual high standard of service has been furnished by the transportation department, and every effort has been made to adjust service to meet change in traffic conditions. During the year forty-seven changes were made in the timetables of the various lines. The increase in car and bus hours operated over previous fiscal year was 4,015 car hours and 1,278 bus hours. The line "L" extension, which will be completed early in the succeeding fiscal year, will provide a direct service to Fleishhacker Pool.

Claims Department:

Suits tried in the Superior, Municipal, and Small Claims Courts involved requests for $446,590.65 damages. The total of all the verdicts rendered amounted to $20,744.21, or 4.65 per cent of the amount asked. Out of a total of 3,612 accidents, 30 cases were tried, this being concrete evidence that every effort was made to settle accidents to the satisfaction of the principals concerned.

These accidents have been classified below under two general headings—those accidents in which the Municipal Railway was directly involved and those accidents occurring on or near the right-of-way, but in which a Municipal Railway car was not directly involved. These two general headings have been further classified, and the number of accidents occurring under each classification is given.

CLASSIFICATION OF ACCIDENT

	Number of Accidents
MUNICIPAL RAILWAY INVOLVED	
1. Automobile collisions	1,781
2. Injuries to passengers	1,087
3. Injuries to pedestrians	30
4. Damage to wearing apparel	85
5. Street car collisions	45
6. Broken windows	168
7. Employees injured	136
8. Miscellaneous	236
NEAR TRACK—MUNICIPAL RAILWAY NOT INVOLVED	
9. Automobile collisions	10
10. Pedestrians struck by automobiles	34
	3,612

The "near track" accidents are reported, and a record made of them for the future protection of the crews involved and to safeguard the interests of the Municipal Railway. Of the 1,087 passengers injured, all were personally interviewed by investigators of the Claims Department, as well as a great number of witnesses of these and other accidents.

There was a total of 7,560 witnesses' names obtained by car crews in connection with the accidents enumerated above, all of whom were either personally interviewed or mailed a questionnaire to be returned to the department.

The Claims Department has been successful in the endeavor to have an investigator visit every person who has met with an injury by reason of the operation of the Municipal Railway cars or buses, regardless of the liability for that injury. During the year an additional investigator was employed for night work in order that immediate attention might be given to accidents occurring after the regular business hours.

Since July 1, 1936, the Claims Department has been operated directly under the jurisdiction of the Manager of Utilities and has stood ready to assist in the investigation and settling of the claims made against all the utilities under the jurisdiction of the Public Utilities Commission.

"L" LINE EXTENSION

The "L" line of the Municipal Railway was extended from Taraval Street to 47th Avenue and Wawona Street during the past year. This was a W.P.A. project.

Upper view shows car at 47th Avenue and Wawona.
Lower view shows new tracks and paving on 46th Avenue.

Maintenance of Equipment:

The equipment of the Municipal Railway has been maintained in first-class condition, fifty-six car bodies and nine buses and service trucks having been overhauled and painted, and twenty-two cars rewheeled. Motors totaling 336 have been overhauled and repaired, as were fifty-six units of electrical control apparatus.

During the fiscal year thirty propulsion motors and eleven air compressor armatures were rewound. The usual policy of cleaning cars daily and disinfecting weekly has been maintained throughout the year.

COMMENTS ON FINANCIAL STATEMENTS

GENERAL BALANCE SHEET

EXHIBIT "A"

Road and Equipment—$9,919,868.57

An analysis of this account is given in Schedule 1 which reflects the additions and retirements for the fiscal year. In accordance with the budget provision, the sum of $100,000 has been reserved for depreciation during the current year.

New Construction in Progress—$11,997.74

This item represents costs of surveys in connection with subways and rapid transit system and miscellaneous construction jobs, the costs of which are incomplete as of June 30, 1937.

Rapid Transit System Investigation—$23,999.58

This item covers engineering and other costs in connection with the proposed rapid transit system.

Subway Surveys—$3,123.05

This amount represents expenditures in connection with the Market Street subway survey, the cost of which is incomplete as of June 30, 1937.

CASH WITH THE TREASURER

Municipal Railway Bond Redemption Funds—$600.00

Municipal Railway Bond Interest Funds—$14,167.50

These funds are maintained by transfer to meet principal maturities and bond interest as they become due.

Municipal Railway Operating Fund—$560,573.62

Accident Reserve Fund—$6,881.50

Depreciation Reserve Fund—$332,597.04

The titles of the above funds clearly indicate their purposes, and the balances have been reconciled with the records of the Treasurer of the City and County of San Francisco by the auditing staff of the Municipal Railway.

An analysis of the Accident Reserve Fund is shown in the statement of Reserve Funds—Exhibit "C."

The amount reserved for accidents during the current year was 3 per cent of the gross operating revenue. This amount has proved ample to meet all expenses incurred in connection with the settlement of accident claims.

Manager's Contingent Fund—$4,000.00

This fund is maintained for payment of accident claims and expenses in connection with special investigations. It is in the custody of the following officers:

Mr. Fred Boeken, Manager	$ 700.00
Mr. Thos. B. Johnson, Claims Adjuster	3,300.00
	$4,000.00

These funds have been reconciled with certifications obtained from the depositary and found to be in balance.

Accounts Receivable—$4,246.74

Of the above amount $3,631.70 is due from the Board of State Harbor Commissioners for subsidy of Embarcadero Bus Line. The board has agreed to indemnify the City and County of San Francisco for loss sustained in operation of that line not exceeding $18,000 per year.

The balance of $615.04 is due from outside sources as follows:

Pacific Gas & Electric Co.—Pole Rental	$613.00
Shell Oil Co.—Pole Rental	2.00
R. C. Scott Advertising Co.	.04

Interfund Accounts Receivable from General Fund—$1,197.33

This item represents accrued interest due to the Municipal Railway for the period April, May and June, 1937, on the daily bank balances placed on deposit by the City Treasurer.

In accordance with Ordinance 9870 (N.S.), Municipal Railway funds are deposited with the Treasurer, who in turn places same on deposit with the various banks. Interest in the above amount has accrued on these deposits and is shown as due from the General Fund.

Interfund Accounts Receivable from W.P.A. 1936-37 Projects Fund—$1,129.19

The above item represents amounts due for work performed as follows:

Curving rails	$1,042.35
Traffic Survey Services	86.84

Intrafund Accounts Receivable—$28,793.41

This amount is due between funds of the Municipal Railway as follows:

Due to Depreciation Reserve Fund from Operating Fund for Stores	$24,655.99
Due to Operating Fund from Depreciation Reserve Fund for Labor and Materials used on Depreciation Reserve Fund Replacement Jobs	4,137.42

Materials and Supplies at Carbarn and Storage Yards—$176,979.23

A physical inventory was taken of the material at the storage yard by a member of the auditing staff of the Municipal Railway and a member of the engineeing department, and the items were found to agree with the records. A perpetual inventory is maintained of the materials in the carbarn storeroom which results in material counts being made daily. Materials on hand as of June 30 were found to be in accord with the records, and all prices, extensions, and footings of the inventory sheets have been checked.

Materials and Supplies Contributed—$1,144.80

This amount represents the value of stores on hand received by reason of the abandonment of the Gough Street Line by the Market Street Railway Company:

Total stores received	$4,725.54
Issued during fiscal year	3,580.74
Balance on hand	$1,144.80

Deferred Stationery Cost—$265.20

This item represents cost of transfers previously removed from regular materials and supplies account and carried separately in this account.

Replacement Jobs in Progress—$29,810.02

Cash Advanced to Public Utilities Improvement Fund—$18,955.27

This item represents the balance of $135,120 advanced to finance cost of replacement and reconstruction jobs.

Cash Advanced to W.P.A. City Project Control—$8,373.08

This amount represents balance of $7,500 advanced for line "L" extension construction and $1,625 advanced for test borings.

Deferred Charges Interdepartmental Jobs—$40.00

This amount represents amounts expended in connection with work order received from the San Francisco Water Department, the total cost of which is not as yet complete.

Reimbursement Jobs—$54.74

This is the amount expended on pole moving job No. 194 to June 30, 1937.

Contract, P.O., S.O., and W.O. Liability (Contra)—$44,093.03

This item represents an unadjusted debit for purchase order, service order, work order and contract liability on which no materials have been delivered nor services performed but contracted for, and is offset under accounts payable by a similar amount.

Funded Debt Unmatured—$1,600,000.00

Following is a recapitulation of the unmatured funded debt:

MUNICIPAL RAILWAY 5%—1913

Total issue	$3,500,000.00
Matured 1936-1937	100,000.00
Unmatured June 30, 1937	1,600,000.00
Date of final maturity	Dec. 1, 1952

Matured Funded Debt Unpaid—$600.00

Bonds in the amount of $600 had matured prior to June 30, 1937, but had not been presented for redemption on that date.

Bond Interest Payable—$20,834.17

Interest coupons matured and accrued but unpaid on June 30, 1937, are represented by this amount.

Accounts Payable—$203,871.70

This item consists of the following:

Unpaid Warrants Operating Fund	$100,208.81
Unpaid Warrants Depreciation Reserve Fund	19,633.32
Invoices Operating Fund Not Vouched by Controller	16,768.46
Contract Payments Approved Due	11,851.27
Contract Payments Withheld	1,316.81
Liability for Accident Judgments, Unpaid	10,000.00
Contract P.O., S.O., and W.O. Liability (Contra)	44,093.03
	$203,871.70

Interfund Accounts Payable—$57,101.32

This item represents accounts payable to other city departments as of June 30, 1937. See Exhibit "F."

Intrafund Accounts Payable (Contra)—$28,793.41

Amounts due between funds of the Municipal Railway.
See Exhibit "E."

Accident Reserve—$19,518.26

The following is an analysis of this account for the current fiscal year:

Balance June 30, 1936	$ 19,921.88
Additions to Reserve, 3% of Gross Revenue	94,921.56
Total	$114,843.44
Less Claims Paid, Legal and Other Expenses	95,325.18
Balance June 30, 1937	$ 19,518.26
Represented as follows:	
Accident Reserve Fund Cash	$ 6,881.50
Due from Municipal Railway Operating Fund	12,636.76
Balance of Reserve	$ 19,518.26

Rents Billed in Advance—$9.50

This amount covers rent received in advance from the Yellow Cab Company for July and August, 1937.

Reserve for Overhead—$55.55

This is the reserve accumulated on bills rendered city departments and others to cover vacation, sick leave, and compensation insurance costs.

Miscellaneous Deposits—$60.00

This amount was deposited with the Municipal Railway to cover cost of pole moving job No. 194.

Reserve for Accrued Depreciation—Road and Equipment—$5,290,772.34

This item represents the amount charged to Operations and credited to Depreciation Reserve for depreciation of the properties from December 28, 1912, to June 30, 1937, less charges for retirement.

Surplus—$3,971,273.39

Surplus has been classified in Exhibit "A" in four items as shown hereinunder:

Contributed Surplus	$1,520,216.19
From Operations at the beginning of present fiscal year	2,266,602.47
Total	$3,786,818.66
From Operations during fiscal year	179,729.19
Contributed during fiscal year	4,725.54
Total Surplus	$3,971,273.39

Comparison Charges—Taxes and Other Items—$3,743,164.57

The Municipal Railway being a municipally owned utility is not required to pay any taxes either to the City and County of San Francisco or to the State of California. For comparative purposes, taxes and other items have been recorded as follows:

TAXES	
State of California	$3,102,272.29
City and County of San Francisco Franchise	434,553.26
City and County of San Francisco Car License	35,988.75
City and County of San Francisco Local	154,668.11
Federal Income Tax	13,270.61
	$3,740,753.02
SERVICES FURNISHED	
Water furnished without charge by San Francisco Water Department	2,411.55
Total	$3,743,164.57

EXHIBIT "A"

BALANCE SHEET JUNE 30, 1937

ASSETS

FIXED CAPITAL			
Road and Equipment		$9,919,868.57	
New Construction in Progress		11,997.74	
Rapid Transit Investigation		23,998.58	
Subway Survey		3,123.05	
		$9,958,987.94	
Less Reserve for Depreciation		5,290,772.34	
			$4,668,215.60
CASH			
On Deposit with Treasurer			
Operating Fund		$ 560,573.62	
Bond Redemption Fund		600.00	
Bond Interest Fund		14,167.50	
Accident Reserve Fund		6,881.50	
Depreciation Reserve Fund		332,597.04	
OTHER CASH			
Revolving Fund	$4,000.00		
Cash in Transit		4,000.00	
			918,819.66
ACCOUNTS RECEIVABLE			
Due from Harbor Commission		$ 3,631.70	
Miscellaneous Accounts Receivable		615.04	
			4,246.74
INTERFUND ACCOUNTS RECEIVABLE			
Interest Receivable from General Fund		$ 1,197.33	
Due from W.P.A. 1936-1937 Project Fund		1,129.19	
			2,326.52
Intrafund Accounts—Schedule Annexed			28,793.41
DEFERRED CHARGES			
Materials and Supplies		$ 176,979.23	
Materials and Supplies (Contributed)		1,144.80	
Deferred Stationery Cost		265.20	
Replacement Jobs in Progress		29,810.02	
Prepaid Expenses—Pub. Utilities Com.			
Cash Advanced to P. U. Improvement Fund	$135,120.00		
Less Completed Jobs	116,164.73	18,955.27	
Cash Advanced to City Project Control	$9,125.00		
Less Materials Returned	751.92	8,373.08	
Prepaid Expenses—Controller			
Deferred Charges—Interdepartmental Jobs		40.00	
Deferred Charges—Reimbursement Jobs		54.74	
Deferred Charges—Contracts, Purchase Order, Service Order, Orders for Work (Contra)		44,093.03	
			279,715.37
			$5,902,117.30

LIABILITIES

BONDED DEBT		
Issue of Dec. 1, 1913, due 1937-52 at rate of $100,000 per year	$1,600,000.00	
Matured Bonds (1913 Issue)	600.00	
		$1,600,600.00
BOND INTEREST PAYABLE		
Accrued—Not due	$ 6,666.67	
Matured Coupons Unpaid		
1913 Issue	14,122.50	
1910 Issue (Geary St.)	22.50	
1910 Issue (Market St.)	22.50	
		20,834.17
ACCOUNTS PAYABLE		
Warrants—Operating Fund	$ 100,208.81	
Warrants—Depreciation Reserve Fund	19,633.32	
General Creditors, Operating Fund	16,768.46	
Contracts—Payments Due	11,851.27	
Contracts—Payments Withheld	1,316.81	
Contingent Liabilities—Accident Judgments	10,000.00	
Contracts, Purchase Order, S.O., O.W. (Contra)	44,093.03	
		203,871.70
Interfund Accounts—Schedule Annexed		57,101.32
Intrafund Accounts (Contra)		28,793.41
DEFERRED CREDITS		
Accident Reserve	$ 19,518.26	
Rents Billed in Advance	9.50	
Reserve for Overhead	55.55	
Miscellaneous Deposits	60.00	
		19,643.31
SURPLUS		
Balance June 30, 1935		
Contributed	$1,520,216.19	
Earned Surplus	2,266,602.47	
	$3,786,818.66	
Net Profit for the Twelve Months ended June 30, 1937		
Contributed	$ 4,725.54	
Earned	179,729.19	
Balance June 30, 1937		3,971,273.39
		$5,902,117.30

EXHIBIT "B"

COMPARATIVE INCOME STATEMENT FOR JUNE, 1937, AND TWELVE MONTHS OF FISCAL YEAR 1936-1937

	Month of June 1937	%	Month of June 1936	%	Twelve Months to June 30 1937	%	Twelve Months to June 30 1936	%	Cumulative from December 28, 1912, to June 30, 1937	%
REVENUE										
Passenger Revenue	$260,727.05	100.00	$256,794.05	100.00	$3,137,583.88	100.00	$3,049,140.57	100.00	$67,357,325.44	100.00
Advertising Revenue	1,833.37		1,625.17		22,000.00		19,696.83		348,144.52	
Miscellaneous Revenue	998.37		*1,308.25*		4,468.19		3,770.52		34,711.70	
Total Revenue	$263,558.79		$257,110.97		$3,164,052.07		$3,072,607.92		$67,740,181.66	
OPERATING EXPENSES										
I. Way and Structures	$ 11,987.84	4.60	$ 13,771.37	5.36	$ 144,561.22	4.61	$ 135,345.70	4.44	$ 2,691,261.85	4.00
II. Equipment	15,755.74	6.04	17,616.05	6.86	192,726.50	6.14	192,667.28	6.32	4,149,563.03	6.16
III. Power	40,431.37	15.51	39,411.81	15.35	484,763.47	15.45	474,024.94	15.55	9,840,999.26	14.61
IV. Conducting Transportation	143,399.19	55.00	141,420.85	55.07	1,698,938.08	54.15	1,683,581.46	55.21	34,323,432.89	50.96
VI. General and Miscellaneous	17,652.39	6.77	17,845.09	6.95	192,923.90	6.15	189,230.68	6.21	3,594.543.17	5.33
Total Operating Expense	$229,226.53	87.92	$230,065.17	89.59	$2,713,913.17	86.50	$2,674,850.06	87.73	$54.599,800.20	81.06
PROFIT FROM OPERATIONS	$ 34,332.26		$ 27,045.80		$ 450,138.90		$ 397,757.86		$13.140,381.46	
DEDUCT PROVISION FOR										
Accidents	$ 7,906.76	3.03	$ 7,713.33	3.00	$ 94,921.56	3.03	$ 92,178.24	3.02	$ 1,619,266.81	2.41
Depreciation	8,333.34	3.20	8,333.34	3.25	100,000.00	3.18	100,000.00	3.28	5,936,628.50	8.81
Total Deductions	$ 16,240.10	6.23	$ 16,046.67	6.25	$ 194,921.56	6.21	$ 192,178.24	6.30	$ 7,555,895.31	11.22
INCOME FROM OPERATIONS	$ 18,092.16		$ 10,999.13		$ 255,217.34		$ 205,579.62		$ 5,584,486.15	
NON-OPERATING INCOME										
Income from Securities Owned									$ 597,037.91	
Interest on Bank Balances	$ 1,197.33		$ 1,262.99		$ 4,204.08		$ 6,281.17		63,924.03	
Subsidy from Harbor Commission	200.51		*47.53*		3,631.70		728.59		70,229.71	
Other Income (P. & L.)									299,157.04	
Total Non-Operating Income	$ 1,397.84		$ 1,215.46		$ 7,835.78		$ 7,009.76		$ 1,030,348.69	
GROSS INCOME	$ 19,490.00		$ 12,214.59		$ 263,053.12		$ 212,589.38		$ 6,614,834.84	
DEDUCTIONS FROM GROSS INCOME										
Interest on Funded Debt	$ 6,666.67	2.56	$ 7,083.33	2.76	$ 82,083.34	2.62	$ 87,083.33	2.86	$ 4,078,600.91	6.06
Miscellaneous Debits (P. & L.)	1,093.56	.42			1,240.59	.04	3,549.34	.11	89,902.27	.13
Total Deductions from Gross Income	$ 7,760.23	2.98	$ 7,083.33	2.76	$ 83,323.93	2.66	$ 90,632.67	2.97	$4,168,503.18	6.19
NET INCOME	$ 11,729.77	4.50	$ 5,131.26	2.00	$ 179,729.19	5.73	$ 121,956.71	4.00	$ 2,446,331.66	3.63

COMPARISON CHARGES

June, 1937	$ 8,362.84
July 1, 1936, to June 30, 1937	100,460.16
December 28, 1912, to June 30, 1937	3,743,164.57

EXHIBIT "C"

RESERVE FUNDS OF THE MUNICIPAL RAILWAY AS OF JUNE 30, 1937

ACCIDENT RESERVE FUND

Total paid in and/or credited to fund May 1, 1926 to June 30, 1936		$ 952,381.50
Expended for Injuries and Damages May 1, 1926 to June 30, 1936		932,459.62
Unencumbered Balance June 30, 1936		19,921.88
Due from Municipal Ry. (Op.) Fund July 1, 1936 to June 30, 1937	$ 94,921.56	
Less Charges for Injuries and Damages Paid Out of Operating Fund July 1, 1936 to June 30, 1937	95,325.18	*403.62*
Unencumbered Balance at June 30, 1937		19,518.26
The Unencumbered Balance consists of:		
Cash	6,881.50	
Due from Operative Fund	12,636.76	
TOTAL		$ 19,518.26

DEPRECIATION RESERVE FUND

Total paid into and/or owing to Fund May 1, 1926 to June 30, 1936			$2,373,549.23
Expended for Replacements May 1, 1926, to June 30, 1936			763,322.26
Unencumbered Balance June 30, 1936			$1,610,226.97
Bal. Due from Mun. Ry. Oper. Fund July 1, 1936 to June 30, 1937		—	
Add Cash Transfers from Oper. Fund July 1, 1936 to June 30, 1937		$100,000.00	
Total Pd. into and/or owing to Fd. July 1, 1936 to June 30, 1937		$100,000.00	
Less Charges for Replacements Paid out of Oper. Fund July 1, 1936, to June 30, 1937	$ 4,137.42		
Less Charges for Replacements Paid out of Deprec. Fund July 1, 1936 to June 30, 1937	183,983.21	$188,120.63	
Net Increase in Fund July 1, 1936 to June 30, 1937			*88,120.63*
			1,522,106.34
Less Balances due from Operating Fund Applicable to Fiscal Years 1927-1928 to 1932-1933			1,186,694.86
Unencumbered Balance June 30, 1937			335,411.48
The Unencumbered Balance consists of:			
Cash			$ 332,597.04
Cash Advanced to Public Utilities Improvement Fund			15,097.27
Available Resources—Materials and Supplies			24,655.99
Due from Operative Fund Account No. 1110			
Due to Oper. Fund—Replacement Job Expenditures Applicable to Fiscal Years Prior to June 30, 1936			
Ditto for Fiscal Year 1936-1937			*4,137.42*
Outstanding Warrants			*19,633.32*
Contracts—Payments Due			*11,851.27*
Contracts—Payments Withheld			*1,316.81*
			$ 335,411.48

Italic figures denote loss and deficiency.

EXHIBIT "E"

INTRAFUND ACCOUNTS

JUNE 30, 1937

Due Depreciation Reserve Fund from Operating Fund for balance of $100,000 Depreciation Allowance	......
Due Depreciation Reserve Fund from Operating Fund for balance of stores transferred to Operating Fund when Stores Revolving Fund was established and for subsequent transfers	$ 24,655.99
Due Operating Fund from Depreciation Reserve Fund for Labor and Material used on replacement jobs during Fiscal Year 1936-1937	4,137.42
Total per Balance Sheet	$ 28,793.41

EXHIBIT "D"

COMPARISON OF BUDGET WITH ACTUAL RECEIPTS AND EXPENDITURES FISCAL YEAR ENDED JUNE 30, 1937

RECEIPTS	Budget	Actual	Increase or Decrease
Operating Revenue and Other Income	$3,185,597.00	$3,168,256.15	*$17,340.85*
Embarcadero Bus Subsidy	....	3,631.70	3,631.70
Total Receipts	$3,185,597.00	$3,171,887.85	*$13,709.15*
EXPENDITURES			
Way and Structures	$ 166,956.00	$ 158,300.98	*$ 8,655.02*
Equipment	206,615.00	194,591.53	*12,023.47*
Power	474,000.00	484,763.37	10,763.37
Conducting Transportation	1,741,780.00	1,698,937.19	*42,842.81*
General and Miscellaneous	176,928.00	170,594.34	*6,333.66*
Depreciation Reserve	100,000.00	100,000.00	......
Claims Department	93,764.00	95,325.18	1,561.18
Employees Compensation	12,000.00	22,374.58	10,374.58
Bond Interest	82,500.00	82,500.00	......
Bond Redemption	100,000.00	100,000.00	......
Total Expenditures	$3,154,543.00	$3,107,387.17	*$47,155.83*
Net Savings on Budget Estimate	$ 31,054.00	$ 64,500.68	$33,446.68

EXHIBIT "F"

INTERFUND ACCOUNTS PAYABLE

June 30, 1937

GENERAL FUND			
Power Bills for June—Actual		$36,277.86	
Department of Public Works			
Bureau of Engineering—			
Hoisting Engineers Services for June—Actual	$ 33.47		
Engineering and Inspection Lower Market for June—Actual	250.00		
Blueprinting, Etc., for April and May—Actual	11.69	295.16	
			$36,573.02
COUNTY ROADS FUNDS			
Department of Public Works			
Bureau of Streets (Repair)—June Paving—Actual			493.65
SAN FRANCISCO WATER DEPARTMENT			
Personal Services for May—Actual		184.63	
Personal Services for June—Actual		178.46	
			363.09
PUBLIC UTILITIES COMMISSION			
Bureau of Engineering—Payroll Charges for June—Actual			1,175.15
EMPLOYEES' RETIREMENT SYSTEM			
Pension Matching Cost for May—Actual	6,471.44		
Pension Matching Cost for June—Actual	6,257.29	12,728.73	
Prior Service Cost for June—Actual		1,629.00	
Death Claim for June—Actual		606.76	
Medical and Compensation Charges for June—Actual		2,844.57	
Hospital Services to Employees in May—Actual	379.30*		
Hospital Services to Employees in June—Actual	308.05	687.35	
			18,496.41
Total as per Balance Sheet			$57,101.32

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*Items marked were entered in Appropriation Ledger in June, to be paid by Cash Transfer in July.

SCHEDULE 1

SCHEDULE OF ROAD AND EQUIPMENT AS AT JUNE 30, 1937

Acct. No.	WAYS AND STRUCTURES	Balance June 30, 1936	Additions Fiscal Year 1936-1937 Depreciation Reserve Fund	Additions Fiscal Year 1936-1937 Municipal Railway Fund	Additions Fiscal Year 1936-1937 Total	Retirements During Fiscal Year 1936-1937	Net Additions Fiscal Year 1936-1937	Balance June 30, 1937
501	Engineering and Superintendence	$ 401,973.08	$ 6,584.23	$ 897.98	$ 7,482.21	$ 4,483.50	$ 2,998.71	$ 404,971.79
502	Right of Way	169,839.07	....	....	....	....	....	169,839.07
503	Other Land Used in Electric Railway Operation	265,490.48	....	....	....	....	....	265,490.48
504	Grading	449,596.35	....	....	....	....	....	449,596.35
505	Ballast	320,081.94	2,617.12	....	2,617.12	1,719.56	897.56	320,979.50
506	Ties	170,101.66	3,232.66	.54	3,233,20	2,882.00	351.20	170,452.86
507	Rails, Rail Fastenings and Joints	835,131.67	24,319.59	76.85	24,396.44	12,686.67	11,709.77	846,841.44
508	Special Work	297,829.02	5,581.00	866.87	6,447.87	6,443.35	4.52	297,833.54
510	Track and Roadway Labor	704,243.61	24,128.15	1,651.25	25,779.40	22,170.00	3,609.40	707,853.01
511	Paving	1,091,452.61	19,958.99	232.71	20,191.70	25,813.15	*5,621.45*	1,085,831.16
512	Roadway Machinery and Tools	17,798.48	....	28.65	28.65	....	28.65	17,827.13
513	Tunnels and Subways	13,600.00	....	....	....	....	....	13,600.00
515	Bridges, Trestles and Culverts	4,231.42	....	....	....	....	....	4,231.42
516	Crossings, Fences and Signs	41,810.19	....	....	....	....	....	41,810.19
517	Signals and Interlocking Apparatus	2,437.58	....	....	....	....	....	2,437.58
518	Telephone and Telegraph Lines	162.49	....	....	....	....	....	162.49
519	Poles and Fixtures	248,468.35	....	....	....	260.72	*260.72*	248,207.63
520	Underground Conduits	142,495.30	....	....	....	....	....	142,495.30
521	Distribution System	730,620.95	40.31	641.62	681.93	534.25	147.68	730,768.63
523	Shops and Carhouses	859,406.61	19,457.01	7,822.72	27,279.73	....	27,279.73	886.686.34
524	Stations, Miscellaneous Buildings and Structures	35,474.69	....	7.98	7.98	....	7.98	35,482.67
527	Cost of Road Purchased	44,154.47	....	....	....	....	....	44,154.47
529	Other Expenditures, Ways and Structures	74,486.39	11,091.19	2,144.06	13,235.25	3,373.48	9,861.77	84,348.16
	Total Ways and Structures	$6,920,886.41	$117,010.25	$ 14,371.23	$131,381.48	$ 80,366.68	$ 51,014.80	$6,971,901.21
	EQUIPMENT							
530-A	Passenger and Combination Cars—Electric	$1,539,930.93	....	....	....	$ 3,471.61	*$ 3,471.61*	$1,536,459.32
530-B	Passenger and Automotive Cars—Automotive	177,618.90	$ 40,789.50	1,170.00	41,959:50	37,892.25	4,067.25	181,686.15
532-A	Service Equipment—Electric	13,871.11	....	....	....	....	....	13,871.11
532-B	Service Equipment—Automotive	29,328.08	5,263.60	257.79	5,521.39	4,919.46	601.93	29,930.01
533	Electric Equipment of Cars	764,028.91	....	....	....	....	....	764,028.91
536	Shop Equipment	42,651.37	....	47.38	47.38	....	47.38	42,698.75
537	Furniture and Office Equipment	31,185.64	1,353.63	427.41	1,781.04	1,298.33	482.71	31,668.35
	Total Equipment	$2,598,614.94	$47,406.73	$ 1,902.58	$ 49,309.31	$ 47,581.65	$ 1,727.66	$2,600,342.60
	GENERAL AND MISCELLANEOUS							
546	Law Expenditures	$ 26,668.31	....	....	....	....	....	26,668.31
547	Interest During Construction	252,270.75	....	....	....	....	....	252,270.75
550	Miscellaneous	68,685.70	....	....	....	....	....	68,685.70
	Total General and Miscellaneous	$ 347,624.76	....	....	....	....	....	$ 347,624.76
	Total Road and Equipment	$9,867,126.11	$164,416.98	$ 16,273.81	$180,690.79	$127,948.33	$ 52,742.46	$9,919,868.57

SCHEDULE 2

ANALYSIS RESERVE FOR DEPRECIATION AS AT JUNE 30, 1937

Fiscal Year Ended	Provision for Depreciation: Total	Provision for Depreciation: Assets in Property Ledger	Provision for Depreciation: Track Roadway and Distributing System	Cost of Track Roadway and Distributing System	Resulting Rate of Depreciation on Track Roadway and Distributing System
1913	$ 24,291.63	$ 2,287.30	$ 22,004.33	$ 887,741.07	2.479%
1914	146,458.00	14,691.43	131,766.57	2,506,629.27	5.257%
1915	187,567.61	38,032.38	149,535.23	2,693,316.20	5.552%
1916	242,627.10	49,699.27	192,927.83	2,946,048.47	6.549%
1917	158,432.96	50,503.64	107,929.32	3,386,455.14	3.187%
1918	218,247.05	51,130.43	167,116.62	3,657,705.59	4.569%
1919	226,063.53	51,790.20	174,273.33	3,933,344.91	4.431%
1920	279,655.18	53,103.95	226,551.23	3,961,963.23	5,718%
1921	307,446.06	55,555.96	251,890.10	3,971,484.49	6.342%
1922	310,748.77	58,138.62	252,610.15	4,080,339.75	6.191%
1923	327,203.43	62,666.43	264,537.00	4,154,343.16	6.368%
1924	361,761.63	73,409.56	288,352.07	4,295,786.51	6.712%
1925	379,157.68	78,927.16	300,230.52	4,490,693.53	6.686%
1926	403,370.26	85,426.66	317,943.60	4,664,565.16	6.816%
1927	239,851.34	91,192.69	148,658.65	4,772,312.31	3.115%
1928	254,047.02	113,718.19	140,328.83	4,854,615.62	2.891%
1929	263,823.68	118,475.19	145,348.49	5,437,166.54	2.673%
1930	281,373.60	115,642.68	165,730.92	5,506,689.55	3.010%
1931	283,536.12	118,431.22	165,104.90	5,546,137.51	2,977%
1932	285,893.02	117,388.73	168,504.29	5,580,670.72	3.019%
1933	286,994.49	106,494.73	180,499.76	5,580,230.05	3.235%
1934	287,000.59	105,830.85	181,169.74	5,581,638.33	3.246%
1935	287,052.06	106,945.99	180,106.07	5,529,494.42	3,257%
1936	285,920.50	102,668.15	183,252.35	5,862,491.58	3.126%
1937	296,013.78	102,288.77	193,725.01	5,886,190.02	3.291%
	$6,624,537.09	$1,924,440.18	$4,700,096.91		

Total Provision as above		$6,624,537.09
Deduct: Charges to Reserve on Account of Assets Retired During Fiscal Years:		
Prior Years—1928-29 to 1935-36	$406,642.28	
Fiscal Year 1936-37	123,741.54	
	$530,383.82	
Deduct: Amount not funded credited to Reserve in Fiscal Years 1933-34 to 1936-37	803,380.93	1,333,764.75
Total Reserve as per Exhibit "A"		$5,290,772.34

SUMMARY OF INCOME AND OUTLAY

December 28, 1912, to June 30, 1937

INCOME			
Passenger and Other Revenue	$67,740,181.66		
Subsidy from Harbor Commission	70,229.71		
Contributed	1,524,941.73		
Interest on Bonds and Daily Balances	660,961.94		
Miscellaneous Credits—Profit and Loss	299,157.04		
Cash Received from Sale of Original Bonds Issued	5,481,000.00		
Total Income and Credits		$75,776,472.08	
OUTLAY			
Operating Expenses	$54,599,800.20		
Bond Interest Charges	4,078,600.91		
Injuries and Damages	1,599,748.55		
Miscellaneous Debits—Profit and Loss	89,902.27		
Total Expenses		$60,368,051.93	
Excess of Income over Expenses		15,408,420.15	
Bonds Redeemed		3,881,000.00	
Balance after Expenses and Bond Redemption		$11,527,420.15	
Expended for Construction Extensions, Betterments, Replacements and Renewals and Road and Equipment Retired		10,634,654.12	
Balance, Net Cash, Receivables, Stores, etc., on Hand, See Below:			$892,766.03

SOURCES OF FUNDS	
From Bond Sales	$ 5,481,000.00
From Deprec. Res. Fund	951,442.89
From Earnings and Contributions	4,420,650.95
	$10,853,093.84
Deduct Retirements	864,295.88
	$ 9,988,797.96
Add Portion of Retirements Charged to Reserve	645,856.16
	$10,634,654.12

CASH		
Cash, Manager's Fund, Net	$ 4,000.00	
*Cash, Operating Fund, Net	460,364.81	
Cash, Accident Reserve Fund, Net	6,881.50	
**Cash, Depreciation Reserve Fund, Net	301,112.45	
Cash, Bond Redemption Fund, Net	....	
Cash, Bond Interest Fund, Net	....	
Total Net Cash		772,358.76
ACCOUNTS RECEIVABLE		
Due from City and County of San Francisco—Interest	$ 1,197.33	
Due from Harbor Commission	3,631.70	
Miscellaneous Accounts Receivable	1,744.23	
Total Accounts Receivable		6,573.26
STORES		
At Car Barn	$ 70,565.04	
At Storage Yard	106,414.19	
Contributed Stores	1,144.80	
Total Stores		178,124.03
DEFERRED ASSETS		
Cash Advanced to W.P.A.-City Project Control	$ 8,373.08	
Cash Advanced to Public Utilities Improvement Fund from Deprec. Reserve Fund and Operating Fund	18,955.27	
Miscellaneous Deferred Items	359.94	
Total Deferred Assets		27,688.29
TOTAL CASH, RECEIVABLES, STORES, ETC.		$ 984,744.34

LIABILITIES

Loans and Notes Payable	....		
Contracts—Payments Withheld	$ 1,316.81		
Accounts Payable	73,869.78		
Contingent Liabilities—Accident Judgments	10,000.00		
Accrued Interest Not Due	6,666.67		
Unadjusted Credits	125.05		
Total Liabilities		91,978.31	
NET FREE ASSETS			$892,766.03

* Due to Depreciation Reserve Fund from Operating Fund for balance of Stores turned over to Operating Fund when Stores Revolving Fund was established $24,655.99

* Due to Accident Reserve Fund from Operating Fund—net difference amount reserved and accident costs to date 12,636.76

** Due to Operating Fund from Depreciation Reserve Fund for labor and material on Depreciation Reserve Fund Replacement Jobs 4,137.42

STATEMENT OF BUS LINE OPERATIONS

From July 1, 1936, to June 30, 1937

Acct. No.				
	PASSENGER REVENUE			
	Route No. 1 (10th Ave. and California St. to Edna and Monterey Blvd.)	$52,987.65		
	Route No. 4 (Embarcadero Route)	42,455.80		
	Route No. 5 (Marina Route)	9,415.55		
	Route No. 6 (Eureka-Diamond Route)	11,169.95		
	Special Buses	62.55		
	Over and Short Adjustment, July 1, 1936, to June 30, 1937	106.05		
	Total Cash Passenger Revenue		$116,197.55	
	REVENUE CREDITS			
	1,265 Special Tickets at .02½	$ 31.63		
	3,219 Special Tickets at .05	160.95		
	214 Q. M. Tickets at .05	10.70		
	194,937 School Tickets at .02½	4,873.42		
	Total Revenue Credits		5,076.70	
	Total Passenger Revenue and Credits			$121,274.25
	OPERATING EXPENSES			
	GROUP II—EQUIPMENT			
39A	Bus Engines, Labor and Material	$ 7,755.43		
39B	Painting Buses	840.35		
39C	Chassis, Labor and Material Buses	4,774.89		
39D	Bus Tires, Including Repairs	8,492.52		
39E	Bus Body Repairs	2,704.82		
39F	Repairs to Garage Equipment	56.58		
39G	Transmission, Labor and Material Buses	1,972.72		
39H	Brake Work, Labor and Material Buses	1,851.86		
41G	Loss on Buses Retired	100.00		
	Total Group II		$ 28,549.17	
	GROUP IV—CONDUCTING TRANSPORTATION			
78A	Gasoline, Buses	$25,835.18		
78B	Oils and Lubricants, Buses	1,298.98		
78C	Conductors—Chauffeurs, Buses	67,640.77		
78D	Greasing, Servicing and Miscellaneous Expense	13,117.64		
78E	Cleaning and Washing Buses	4,058.69		
	Total Group IV		$111,951.26	
	GROUP VI—GENERAL AND MISCELLANEOUS			
88A	Pension Costs, Buses	$ 4,102.53		
89A	Administration, Buses	9,600.00		
89B	Insurance (727,466 miles at .024)	17,459.18		
94	Stationery and Printing	780.00		
95	Store Expense	4,335.96		
98	Rent of Equipment (2,190 hours at .60)	1,314.00		
98A	Garage, Shop, Office and Equipmental Rental	3,410.64		
	Total Group VI		$ 41,002.31	
	Total Operating Expense			$181,502.74
	Operating Loss			$ 60,228.49

FIXED CHARGES		
Accrued Depreciation—Buses	$ 9,532.67	
Accrued Depreciation—Garage Equipment	419.20	
Accrued Depreciation—Fare Boxes	92.64	
Interest on Investment at 5%	9,270.88	
Total Fixed Charges		$ 19,315.39
**Net Loss Fiscal Year		$ *79,543.88*
Average Net Loss Per Day (365 Days' Operation)		$ *217.93*

Italic figures denote loss and deficiency.

Acct. No.		Bus Mileage 727,466 Miles Itemized Cost Per Mile	Bus Hours 78,267 Hours Itemized Cost Per Hour
39A	Bus Engines, Labor and Material	.01066	.09909
39B	Painting Buses	.00116	.01074
39C	Chassis, Labor and Material, Buses	.00656	.06101
39D	Bus Tires, Including Repairs	.01168	.10851
39E	Bus Body Repairs	.00372	.03456
39F	Repairs to Garage Equipment	.00008	.00072
39G	Transmission, Labor and Material, Buses	.00271	.02520
39H	Brake Work, Labor and Material, Buses	.00255	.02366
41G	Loss on Buses Retired	.00013	.00128
	Total Group II—Equipment	.03925	.36477
78A	Gasoline—Buses	.03551	.33009
78B	Oils and Lubricants—Buses	.00179	.01660
78C	Conductors—Chauffeurs, Buses	.09298	.86423
78D	Greasing, Servicing and Misc. Expense, Buses	.01803	.16760
78E	Cleaning and Washing Buses	.00558	.05185
	Total Group IV—Conducting Transportation	.15389	1.43037
88A	Pension Costs—Buses	.00564	.05242
89A	Administration—Buses	.01320	.12266
89B	Insurance—Buses	.02400	.22307
94	Stationery and Printing	.00107	.00996
95	Store Expense	.00596	.05540
98	Rent of Equipment	.00180	.01679
98A	Garage, Shop, Office and Equipment Rental	.00469	.04358
	Total Group VI—General and Miscellaneous	.05636	.52388
	Total Operating Expense	.24950	2.31902
	Accrued Depreciation	.01381	.12834
	Interest on Investment	.01274	.11845
	Total Fixed Charges	.02655	.24679
	Total Expense	.27605	2.56581
	Passenger Revenue Per Bus Mile	.15973	1.48463
	Revenue Credits Per Bus Mile	.00698	.06486
	Total Revenue	.16671	1.54949
	Net Loss	*.10934*	*1.01632*

PASSENGERS CARRIED	
5c Fares	2,322,700
5c Government Tickets	214
2½c School Tickets	194,937
Local Transfers	1,351,759
Free Passengers	5,576
Special Tickets, Free	783
Special Tickets, 2½c	1,265
Special Tickets, 5c	3,219
Total	3,880,453

NOTE: Charges to Insurance Reserve 7/1/36 to 6/30/37.	
Proportion Salary Expenses Claims Department	$1,899.02
Accident Claims Paid	1,241.57
	$3,140.59

**NOTE: Above Net Loss includes amount of $3,631.70, which is the amount charged to State Board of Harbor Commissioners for loss incurred by operation of Embarcadero Bus Line from July 1, 1936, to June 30, 1937. Payment of above amount will make actual Net Loss *$75,912.18*

Italic figures denote loss or deficiency.

COMPARATIVE OPERATING RECEIPT STATEMENT BETWEEN FISCAL YEARS ENDING JUNE 30, 1937, AND JUNE 30, 1936, RESPECTIVELY

FISCAL YEAR ENDED JUNE 30, 1937				FISCAL YEAR ENDED JUNE 30, 1936				COMPARISON			
Line	Receipts	Car Hours	Receipts Per Car Hour	Line	Receipts	Car Hours	Receipts Per Car Hour	Line	Receipts	Car Hours	Receipts Per Car Hour
B	$440,467.80	111,850	$3.93	B	$432,108.45	112,070	$3.86	B	$ 8,359.35	*220*	.07
C	328,925.80	91,058	3.61	C	329,207.05	91,575	3.59	C	*281.25*	*517*	.02
D	227,548.30	58,185	3.91	D	212,861.15	57,419	3.71	D	14,687.15	766	.20
E	143,825.60	51,838	2.77	E	140,239.15	51,415	2.73	E	3,586.45	423	.04
F	313,363.75	63,523	4.93	F	297,545.10	63,517	4.68	F	15,818.65	6	.25
H	233,673.35	78,539	2.98	H	224,829.95	78,193	2.88	H	8,843.40	346	.10
J	259,491.60	64,822	4.00	J	247,132.60	64,085	3.86	J	12,359.00	737	.14
K	297,707.00	86,289	3.45	K	295,121.25	85,215	3.46	K	2,585.75	1,074	*.01*
L	294,563.60	86,207	3.42	L	288,060.05	85,204	3.38	L	6,503.55	1,003	.04
M	8,627.25	9,768	.88	M	13,307.10	10,804	1.23	M	*4,679.85*	*1,036*	*.35*
N	368,021.40	92,528	3.98	N	353,989.65	91,095	3.89	N	14,031.75	1,433	.09
Total	2,916,215.45	794,607	3.67	Total	2,834,401.50	790,592	3.58	Total	81,813.95	4,015	.09

Above Receipts Are for 5c Fares Only

Total Receipts (Bus Lines not Included) $3,051,429.91

Total Receipts (Bus Lines not Included) per car hr. $3.84

Bus Lines

Bus Hours—78,267

Receipts	$116,028.95
Receipts per Bus Hour.....	$1.48
Total Receipts, all sources.	3,167,458.86
Total Bus and Car Hours..	872,873
Total Receipts per Bus & Car hr..	$3.63

Above Receipts Are for 5c Fares Only

Total Receipts (Bus Lines not Included) $2,967,532.12

Total Receipts (Bus Lines not Included) per car hr. $3.75

Bus Lines

Bus Hours—76,989

Receipts	$115,126.80
Receipts per Bus Hour.....	$1.50
Total Receipts, all sources.	3,082,658.92
Total Bus and Car Hours..	867,581
Total Receipts per Bus & Car hr..	$3.55

Above Receipts Are for 5c Fares Only

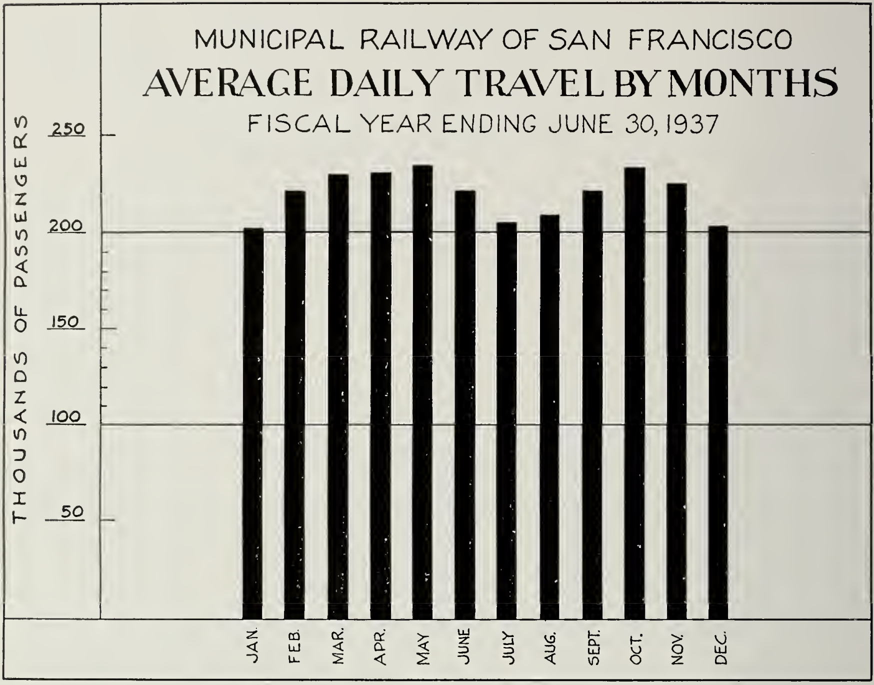
Total Receipts (Bus Lines not Included) $83,897.79

Total Receipts (Bus Lines not Included) per car hour $0.09

Bus Lines

Bus Hours—1,278

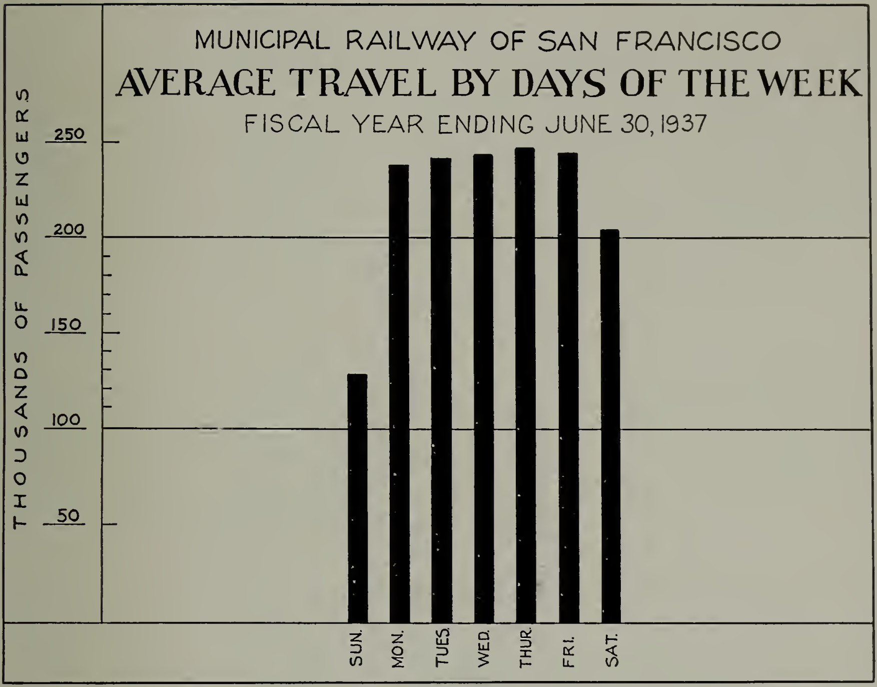
Receipts	$900.15
Receipts per Bus Hour........	*$0.02*
Total Receipts, all sources..	$84,799.94
Total Bus and Car Hours....	5,292
Total Receipts per Bus & Car hr..	$0.08



COMPARATIVE STATEMENT DATA FOR FISCAL YEARS ENDED JUNE 30, 1937, AND JUNE 30, 1936

	Fiscal Year Ended June 30, 1937				Fiscal Year Ended June 30, 1936			
	Total	Ratio to Passenger Revenue	Per Car Mile	Per Car Hour	Total	Ratio to Passenger Revenue	Per Car Mile	Per Car Hour
Passenger Revenue	3,137,584	100.000	.3580	3.5945	3,049,141	100.000	.3484	3.5145
Operating Expense	2,713,913	86.497	.3097	3.1092	2,674,851	87.724	.3056	3.0831
Interest on Funded Debt	82,083	2.616	.0094	.0940	87,083	2.856	.0100	.1004
Provision for Depreciation	100,000	3.187	.0114	.1146	100,000	3.280	.0114	.1153
Provision for Accidents	94,922	3.025	.0108	.1087	92,178	3.023	.0105	.1062
Net Income	179,729	5.728	.0205	.2059	121,957	4.000	.0139	.1406
Passenger Car and Bus Mileage	8,763,838	....	....	....	8,751,421	....	....	....
Passenger Car and Bus Hours	872,873	....	....	....	867,581	....	....	....
Platform Expense	1,392,140	44.370	.1588	1.5949	1,383,337	45.368	.1581	1.5945
Number of Passenger Cars Owned	234				234			
Number of Work Cars Owned	6				6			
Total Number of Cars Owned	240				240			
Total Number of Buses Owned	19				19			
Total No. of Cars and Buses Owned	259				259			
Revenue Passengers Carried	64,606,498	....	7.372	74.02	62,758,252	....	7.171	72.34
Free Transfer Passengers Carried	15,600,699	....	1.780	17.87	15,781,095	....	1.803	18.19
Free Passengers (Employees, Police, etc.)	546,887	....	.062	.63	577,519	....	.066	.67
Total Passengers Carried	80,754,084	....	9.214	92.52	79,116,866	....	9.040	91.20

Note: Above includes Bus Operation.



MUNICIPAL RAILWAY OF SAN FRANCISCO
AVERAGE TRAVEL BY DAYS OF THE WEEK
FISCAL YEAR ENDING JUNE 30, 1937

COST STATEMENT—ITEMIZED ACCOUNTS

Fiscal Year July 1, 1936, to June 30, 1937

STREET CAR OPERATION ONLY

Acct. No.	I. WAY AND STRUCTURES Name	Amount	Per Car Mile	Per Car Hour
1	Superintendent Way and Structures	$ 12,758.48	.00158	.01606
2	Ballast	68.93	.00001	.00009
3	Ties	221.01	.00003	.00029
4	Rails	1,179.16	.00015	.00148
5	Rail Fastenings and Joints	3,225.18	.00040	.00406
6	Special Work	1,148.12	.00014	.00144
8	Roadway and Track Labor	58.059.83	.00722	.07307
9	Miscellaneous Road and Track Expense	3,272.01	.00042	.00412
10	Paving	14,990.15	.00187	.01886
11	Cleaning and Sanding Track	25,636.14	.00319	.03226
13	Tunnels	898.47	.00012	.00113
16	Crossings, Fences, Guards and Signs	377.86	.00005	.00047
17	Signal and Interlocking Systems	419.49	.00005	.00053
18	Telephone and Telegraph System	9.57	.....	.00001
20	Poles and Fixtures	2,074.82	.00026	.00261
21	Underground Conduits	77.90	.00001	.00010
22	Distribution System	18,864.66	.00234	.02374
23	Miscellaneous Electric Line Expense	109.17	.00001	.00014
24	Buildings and Structures	1,402.27	.00017	.00176
28	Transportation for Investment Credit	*232.00*	*.00003*	*.00029*
	Total Way and Structures	$ 144,561.22	.01799	.18193

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	II. EQUIPMENT			
29	Superintendent of Equipment	$ 3,000.00	.00037	.00378
30	Passenger and Combination Cars	126,515.43	.01574	.15921
32	Service Equipment	51.76	.00001	.00007
33	Electric Equipment of Cars	28,365.38	.00353	.03569
36	Shop Equipment, Machinery and Tools	322.01	.00004	.00041
37	Shop Expenses	4,972.54	.00062	.00626
38	Vehicles and Horses	1,050.21	.00013	.00132
	Credit Charges to Bus Line Operation	*100.00*	*.00001*	*.00013*
	Total Equipment	$ 164,177.33	.02043	.20661
	III. POWER			
45	Superintendent of Power	$ 480.81	.00006	.00061
47	Power Plant Equipment	144.73	.00002	.00018
59	Power Purchased	484,137.93	.06024	.60928
	Total Power	$ 484,763.47	.06032	.61007
	IV. CONDUCTING TRANSPORTATION			
63	Superintendent of Transportation	$ 98,284.34	.01223	.12369
64	Conductors and Motormen	1,324,499.79	.16480	1.66686
66	Miscellaneous Car Service Employees	4,233.65	.00053	.00533
67	Miscellaneous Car Service Expense	9,266.43	.00116	.01166
68	Station Employees	11,427.45	.00142	.01438
69	Station Expenses	946.29	.00012	.00119
70	Car House Employees	130,034.52	.01618	.16365
71	Car House Expenses	3,502.86	.00044	.00441
73	Oper. of Telephone & Telegraph Systems	4,338.36	.00054	.00546
78	Miscellaneous Transportation Expense	453.13	.00006	.00057
	Total Conducting Transportation	$ 1,586,986.82	.19748	1.99720
	VI. GENERAL AND MISCELLANEOUS			
83	Salaries and Expense—General Officers	$ 14,425.00	.00179	.01815
84	Salaries and Expense—Gen. Office Clerks	18,867.21	.00235	.02374
85	General Office Supplies and Expense	2,143.19	.00027	.00270
88	Pensions and Gratuities	93,762.94	.01167	.11800
89	Miscellaneous General Expense	4,524.56	.00056	.00569
92	Injuries and Damages—Employees	22,374.58	.00278	.02816
93	Insurance	84.26	.00001	.00011
94	Stationery and Printing	11,036.90	.00137	.01389
95	Store Expense	2,407.00	.00030	.00303
96	Garage and Stable Expense	2,296.73	.00029	.00289
97	Rent of Tracks and Terminals	4,449.00	.00055	.00560
	Credit Charges to Bus Line Operations	*6,990.60*	*.00087*	*.00880*
	Total General and Miscellaneous	$ 169,380.77	.02107	.21316

RECAPITULATION

Acct. No.	Name		Amount	Per Car Mile	Per Car Hour
I.	Way and Structures		$ 144,561.22	.01799	.18193
II.	Equipment		164,177.33	.02043	.20661
III.	Power		484,763.47	.06032	.61007
IV.	Conducting Transportation		1,586,986.82	.19748	1.99720
VI.	General and Miscellaneous		169,380.77	.02107	.21316
	Total Recapitulation		$ 2,549,869.61	.31729	3.20897
	Depreciation Reserve	$100,000.00			
	Less: Applicable to Buses	10,044.51	89,955.49	.01119	.11321
	*Accident Reserve	94,921.56			
	Less: Applicable to Buses	17,459.18	77,462.38	.00964	.09749
	Bond Interest	82,083.34			
	Less: Applicable to Buses	9,270.88	72,812.46	.00906	.09163
	Grand Total		$ 2,790,099.94	.34718	3.51130

*Actual Payments and Accident Costs	$ 95,325.18
Less: Applicable to Buses	3,140.59
	92,184.59

Car Mileage	8,036,372
Car Hours	794,606

Note: Bus Line Operation not included.

Italic figures denote loss and deficiency.

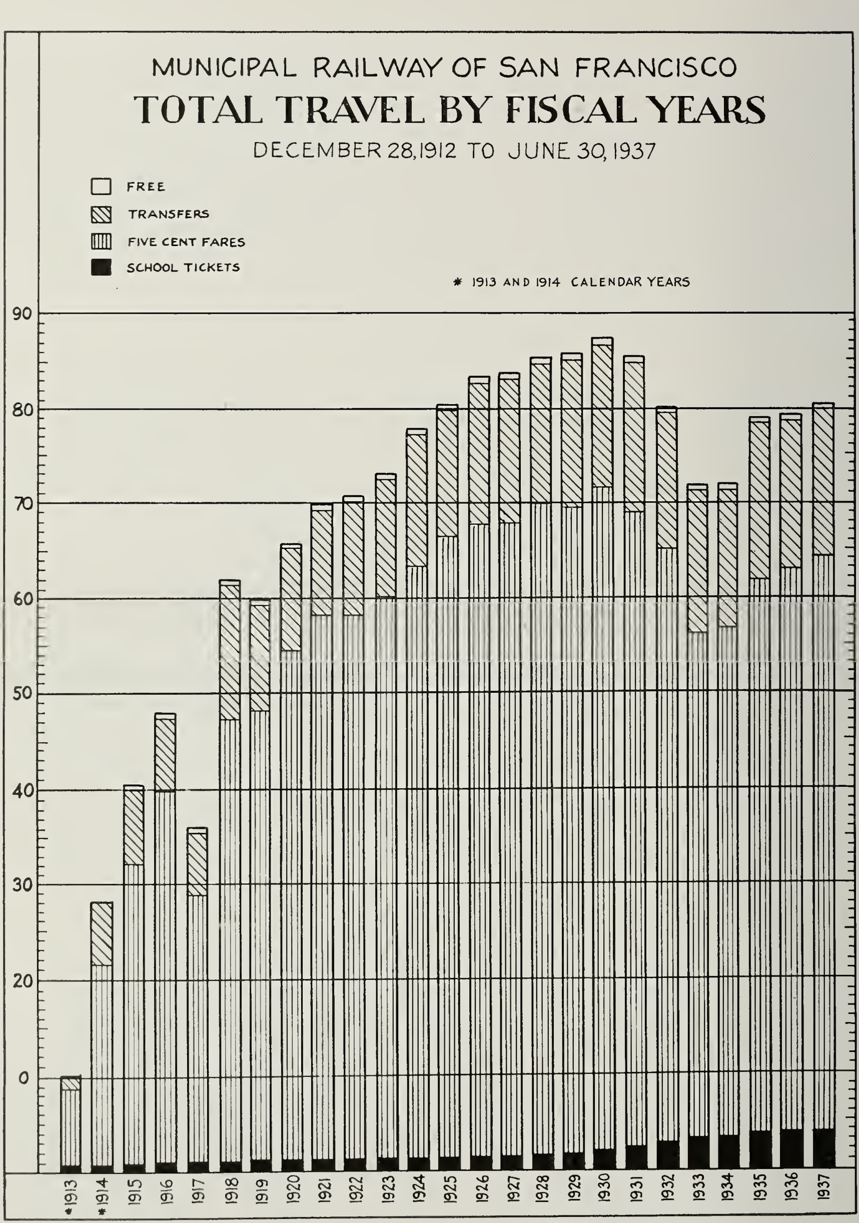
COST STATEMENT—ITEMIZED ACCOUNTS

Fiscal Year July 1, 1936, to June 30, 1937

BUS OPERATIONS ONLY

II. EQUIPMENT

No. Acct.	Name	Total	Per Bus Mile	Per Bus Hour
39A	Bus Engines—Labor and Material	$ 7,755.43	.01066	.09909
39B	Painting Buses	840.35	.00116	.01074
39C	Chassis—Labor and Material—Buses	4,774.89	.00656	.06101
39D	Bus Tires, Including Repairs	8,492.52	.01168	.10850
39E	Bus Body Repairs	2,704.82	.00372	.03455
39F	Repairs to Garage Equipment	56.58	.00008	.00072
39G	Transmission—Labor and Mat.—Buses	1,972.72	.00271	.02521
39H	Brake Work—Labor and Mat.—Buses	1,851.86	.00255	.02367
41G	Loss on Buses Retired	100.00	.00013	.00128
	Total Equipment	$ 28,549.17	.03925	.36477



MUNICIPAL RAILWAY OF SAN FRANCISCO

TOTAL TRAVEL BY FISCAL YEARS

DECEMBER 28, 1912 TO JUNE 30, 1937

IV. CONDUCTING TRANSPORTATION

Acct. No.			Amount	Per Bus Mile	Per Bus Hour
78A	Gasoline—Buses	$	25,835.18	.03552	.33009
78B	Oils, Lubricants—Buses		1,298.98	.00178	.01660
78C	Conductors-Chauffeurs—Buses		67,640.77	.09298	.86423
78D	Greasing and Servicing—Buses		13,117.64	.01803	.16760
78E	Cleaning and Washing Buses		4,058.69	.00558	.05185
	Total Conducting Transportation	$	111,951.26	.15389	1.43037

VI. GENERAL AND MISCELLANEOUS

Acct. No.			Amount	Per Bus Mile	Per Bus Hour
88A	Pension Costs—Buses	$	4,102.53	.00564	.05242
89A	Administration—Buses		9,600.00	.01320	.12266
94	Stationery and Printing		780.00	.00107	.00996
95	Store Expenses		4,335.96	.00596	.05540
98	Rent of Equipment		1,314.00	.00180	.01679
98A	Garage, Shop, Office and Equip. Rental		3,410.64	.00469	.04358
	Total General and Miscellaneous	$	23,543.13	.03236	.30081

RECAPITULATION

			Amount	Per Bus Mile	Per Bus Hour
II.	Equipment	$	28,549.17	.03925	.36477
IV.	Conducting Transportation		111,951.26	.15389	1.43037
VI.	General and Miscellaneous		23,543.13	.03236	.30081
	Total Recapitulation	$	164,043.56	.22550	2.09595
	Depreciation Reserve	$	10,044.51	.01381	.12834
	*Injuries and Damages (Reserve)		17,459.18	.02400	.22307
	Total Reserves	$	27,503.69	.03781	.35141
	Interest on Investment	$	9,270.88	.01274	.11845
	Total Bus Costs	$	200,818.13	.27605	2.56581

*Actual Payments and Accident Costs.......$ 3,140.59

Bus Mileage	727,466
Bus Hours	78,267

ANNUAL REPORT OF CLAIM DEPARTMENT

Fiscal Year Ending June 30, 1937

1. Total passengers carried during year		80,754,084
2. Car miles operated:		
Cars	8,036,372	
Buses	727,466	8,763,838
3. Number of passengers to mile		9.21
4. Number of accident reports filed		3,612
5. Number of accidents fatal		3
6. Number of fatal accidents to passengers		1
7. Number of accidents—personal injuries		969
8. Number of claims presented		694
9. Number of claims adjusted		376
10. Number of suits instituted		66
11. Number of suits pending		75
12. Number of passengers carried per accident report		22,357
13. Number of passengers carried per personal injury report		83,338
14. Number of passengers carried per fatal accident		80,754,084

Classification

1. Car collisions	45	.0124
2. Auto and wagon collisions	1,781	.4931
3. Boarding moving car	305	.0844
4. Leaving moving car	110	.0305
5. Miscellaneous	1,371	.3796
	3,612	1.0000

1. Percentage of accidents to passengers carried	.00004
2. Total revenue	$3,164,052.07
3.* Total amount paid for accident claims, office and miscellaneous expense	95,325.18
4. Ratio to operating revenue	.0301

Recapitulation

Amounts Paid

1. Personal injuries	$ 53,226.11
2. Property damage	4,182.86
3.* Salaries and wages	25,017.44
4. Miscellaneous and hospital	12,898.77
Total	$ 95,325.18

Note: 1. Item No. 4 of the above "Number of Accident Reports Filed" also includes any and all reports of accidents happening near the cars in which this Railway was not involved.

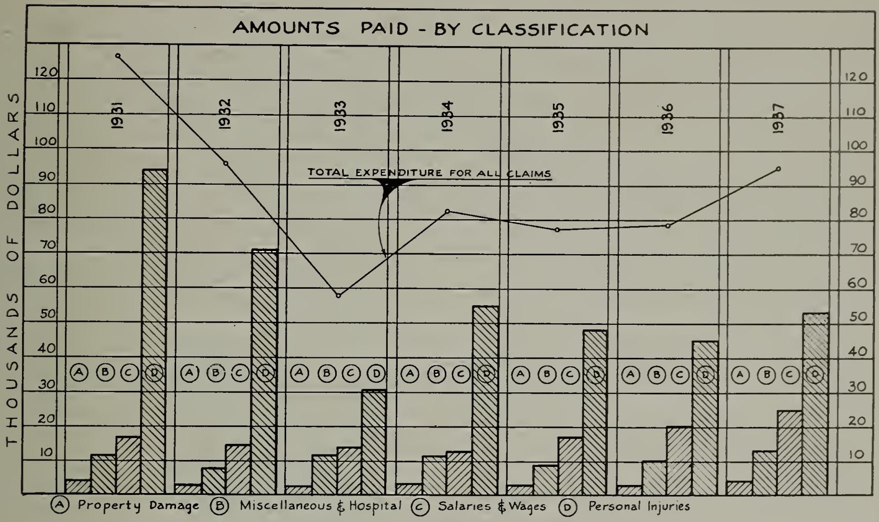
Note: 2. Salaries and wages account includes expense of City Attorney's Office, which amounts to $10,000.00 yearly.

COMPARATIVE STATEMENT OF ACCIDENT REPORTS

Fiscal Years Ending June 30, 1937, and June 30, 1936

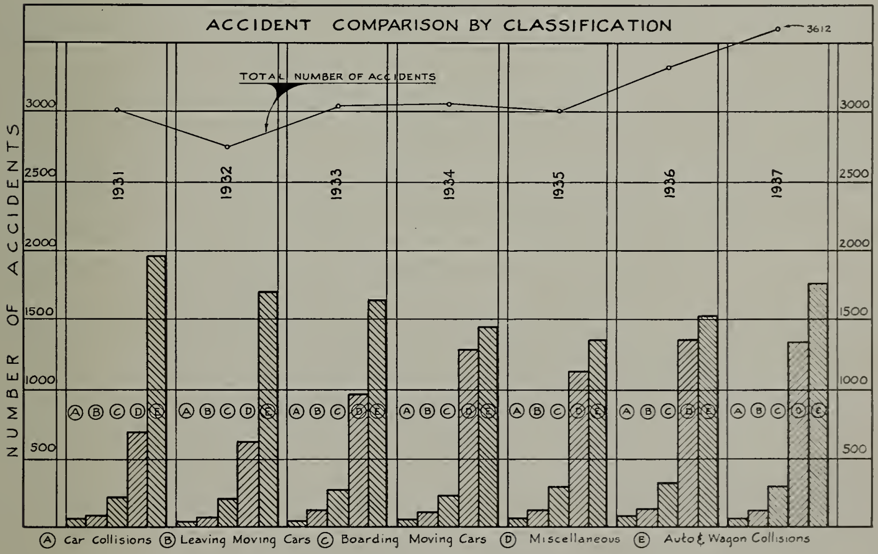
	GEARY STREET DIVISION		17th STREET DIVISION	
Classification	Fiscal Year Ended June, 1937	Fiscal Year Ended June, 1936	Fiscal Year Ended June, 1937	Fiscal Year Ended June, 1936
Car Collisions	15	28	30	29
Auto and Wagon Collisions	864	674	917	832
Boarding Moving Car	137	123	168	179
Leaving Moving Car	62	56	48	54
Miscellaneous	652	608	719	734
Total	1,730	1,489	1,882	1,828

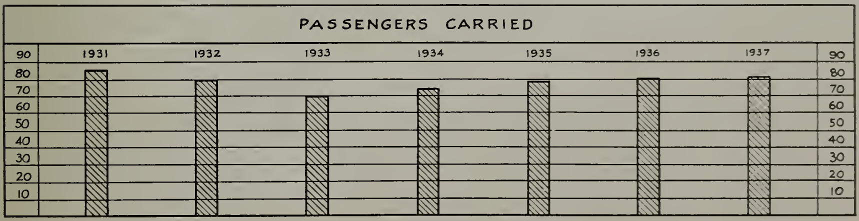
BUREAU OF CLAIMS ~ ANALYSIS OF ACCIDENTS



AVERAGE COST OF EACH ACCIDENT

1931	1932	1933	1934	1935	1936	1937
$42.16	$35.14	$19.16	$26.87	$25.66	$23.58	$26.39





COMPARATIVE STATEMENT OF COMPLAINTS AND COMMENDATIONS

Fiscal Years Ending June 30, 1937, and June 30, 1936

	GEARY STREET DIVISION		17th STREET DIVISION	
	Fiscal Year Ended June, 1937	Fiscal Year Ended June, 1936	Fiscal Year Ended June, 1937	Fiscal Year Ended June, 1936
Discourtesy	34	68	37	61
Improper handling of transfers	14	8	21	5
Not allowing passengers sufficient time to board or alight from cars	28	25	29	35
Failure to stop for intending passengers	32	35	35	24
Carrying passengers beyond destination	17	19	22	8
Careless operation of car	21	36	20	32
Miscellaneous	38	59	39	81
Total no. complaints received	184	250	203	246
Commendations received	19	28	13	24

COMPARATIVE STATEMENT OF BAD ORDER CARS TURNED IN

Fiscal Year Ending June 30, 1937

	Geary St. Car Barn	17th St. Car Barn	Total	System Average
Number of Cars	253	313	566	
Mileage	3,199,524	4,836,848	8,036,372	
Mileage per turn-in	12,646	15,453		14,199
Accidents not included in above	140	175	315	

Fiscal Year Ending June 30, 1936

	Geary St. Car Barn	17th St. Car Barn	Total	System Average
Number of cars	251	322	573	
Mileage	3,209,945	4,833,153	8,043,098	
Mileage per turn-in	12,789	15,010		14,037
Accidents not included in above	134	163	297	

Increased mileage per turn-in fiscal year ending June 30, 1937, over fiscal year ending June 30, 1936 162

BUS ROUTES IN OPERATION—JUNE 30, 1937

ROUTE No. 1: Miles Miles

From Tenth Avenue and California Street via Tenth Avenue, Golden Gate Park, Ninth Avenue, Judah Street, Seventh Avenue, Laguna Honda Boulevard, Portola Drive, Miraloma Drive, Yerba Buena Drive, Plymouth Avenue, Monterey Boulevard, Ridgewood Avenue, Hearst Avenue to Edna Street and Monterey Boulevard. Connects with Lines "B," "C," "K," "L," and "N."

Mileage One Way .... 5.15 Round Trip 10.30

ROUTE No. 4:

From Golden Gate Ferry at Hyde and Jefferson Streets via Jefferson Street, The Embarcadero, Berry Street and Third Street to Southern Pacific Depot.

Mileage One Way .... 3.40 Round Trip 6.80

ROUTE No. 5:

From terminus of Line "F" at Scott and Chestnut Streets via Chestnut Street and Divisadero Street, to Marina Boulevard.

Mileage One Way .... .47 Round Trip .94

ROUTE No. 6:

From the Eureka Valley Station of the Twin Peaks Tunnel at Market and Eureka Streets, East on Market Street to Collingwood Street, South on Collingwood Street to Nineteenth Street, West on Nineteenth Street to Eureka Street, South on Eureka Street to Twenty-third Street, East on Twenty-third Street to Diamond Street, South on Diamond Street to Clipper Street.

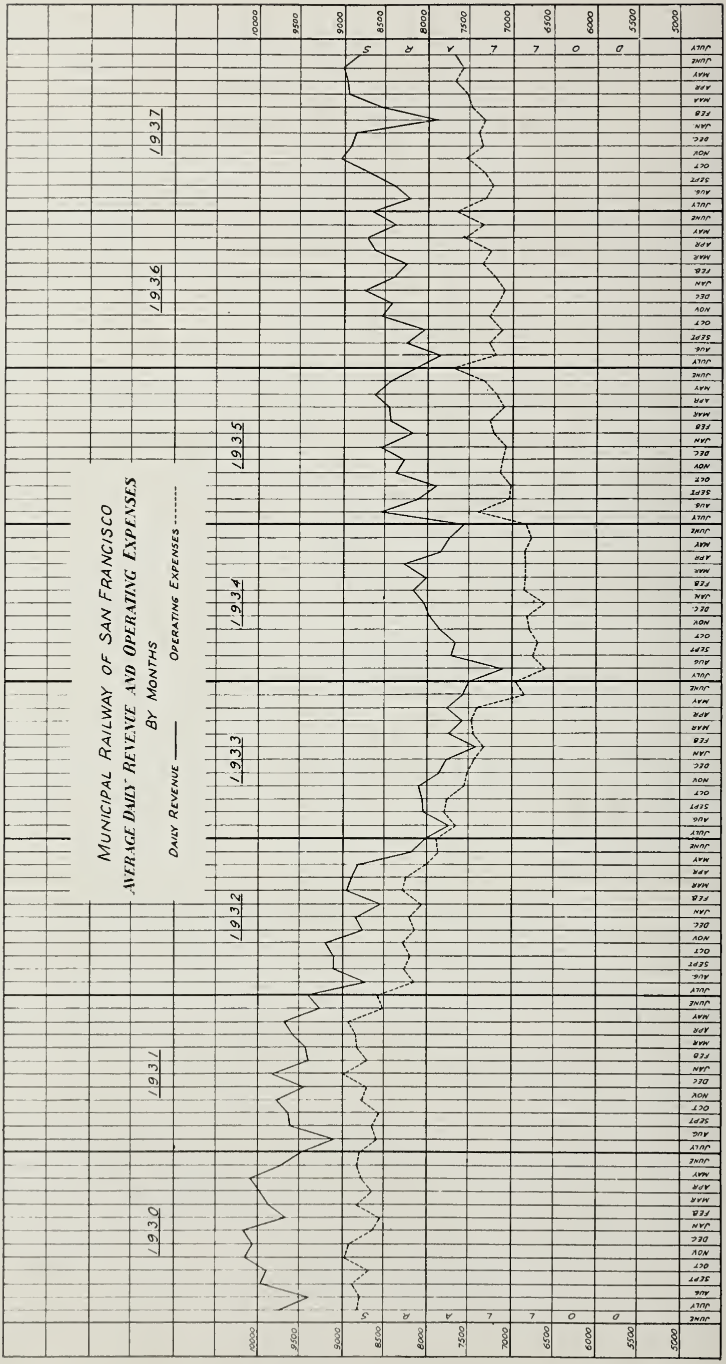
Mileage One Way	1.17	Round Trip	2.34
TOTAL BUS MILEAGE ONE WAY	10.19	Round Trip	20.38

MILEAGE—SINGLE TRACK—JUNE 30, 1937

Operated Track:		
Track Owned and Operated June 30, 1937	73.88	
Track Owned and Operated Jointly with the Market Street Railway Company	4.30	
Total Operated Track		78.18
Non-Operated Track, Sidings, Turn-outs, etc.:		
Masonic Avenue Spur	.02	
Polk and Geary Streets Spur	.05	
Columbus Avenue, between Washington and Jackson Streets	.08	
Geary Street Car Barn, Sidings and Turn-outs	2.18	
Seventeenth Street Car Barn, Sidings and Turn-outs	1.65	
Total		3.98
Total Single Track Mileage, June 30, 1937		82.16

MILES, ROUTES AND ROUTE MILEAGE—JUNE 30, 1937

Line "B"	14.12	Ocean to Ferries via Geary Street.
Line "C"	11.82	Thirty-third Avenue and California Street to Ferries via California and Geary Streets.
Line "D"	8.48	Presidio to Ferries via Van Ness Avenue and Geary Streets.
Line "E"	7.54	Presidio to Ferries via Union Street and Columbus Avenue.
Line "F"	6.16	Scott and Chestnut Streets to Market, Fourth and Ellis Streets via Chestnut and Stockton Streets.
Line "H"	9.32	Army Street and Potrero Avenue to Fort Mason Transport Docks via Potrero and Van Ness Avenues.
Line "J"	9.12	Thirtieth and Church Streets to Ferries via Church and Market Streets.
Line "K"	15.34	Grafton and Brighton Avenues to Ferries via Ocean Avenue, Twin Peaks Tunnel and Market Street.
Line "L"	15.68	Beach to Ferries via Taraval Street, Twin Peaks Tunnel and Market Street.
Line "M"	4.84	Plymouth Avenue and Broad Street to St. Francis Circle via Broad Street and Nineteenth Avenue.
Line "N"	14.56	Ocean Beach to Ferries via Judah Street, Sunset Tunnel and Market Street.
	116.98	Total Route Mileage.
	78.18	Total Track Mileage Operated.
	38.80	Duplicate Routes.



MUNICIPAL RAILWAY OF SAN FRANCISCO
AVERAGE DAILY REVENUE AND OPERATING EXPENSES
BY MONTHS

CHRONOLOGY

December 2, 1902. Election. Proposition authorizing $700,000.00 bonds defeated.

October 8, 1903. Election. Proposition authorizing $710,000.00 bonds defeated.

November 6, 1903. Franchise of Geary Street, Park and Ocean Railroad Company expired.

June, 1906. Budget appropriation $325,000.00 for Geary Street Railroad. Used for reconstruction and rehabilitation of streets and buildings destroyed in disaster of April 18-22, 1906.

June, 1907. Budget appropriation $720,000.00 for Geary Street Railroad. Subsequently declared invalid by court.

June 24, 1909. Election. Proposition authorizing $1,950,000.00 bonds defeated, lacking 203 votes.

December 30, 1909. Election. Proposition authorizing $2,020,000.00 bonds carried by 20,000 majority.

April 16, 1910. Superior Court declares bond issue valid in every respect. Decision affirmed by Supreme Court in July, 1910.

July 18, 1910. First lot of bonds, $121,000.00 sold.

Summer, 1911. Construction of Geary Street Railroad commenced.

May 5, 1912. The Geary Street, Park & Ocean Railroad (cable system) ceased operations.

December 28, 1912. The Municipal Railway (overhead trolley system) commenced operation on Geary Street from Kearny Street to Thirty-third Avenue and Park, with ten (10) cars, under direction of Thomas A. Cashin, Superintendent, Mayor James Rolph, Jr., acting as motorman on first car.

April 22, 1913. Referendum election. Agreement with Sutter Street Railroad Company respecting use of tracks on lower Market Street ratified.

June 25, 1913. Municipal Railway in full operation from Ferries to Beach and Park. Forty-three cars owned.

August 26, 1913. Election. Proposition authorizing $3,500,000.00 bonds for extensions of Municipal Railway carried by 37,670 majority.

December 11, 1913. Presidio & Ferries Railroad Company (Union Street Division) taken over by Municipal Railway.

May 16, 1914. Masonic Avenue branch completed.

August 15, 1914. Van Ness Avenue line from Market Street in operation to Exposition grounds.

September 7, 1914. Potrero Avenue line in operation, Eleventh and Market Streets to Twenty-fifth Street and Potrero Avenue.

December 29, 1914. Stockton Street, Columbus Avenue and North Point line in operation through tunnel.

December 29, 1914. Fort Mason Loop commenced operation.

February 10, 1915. Columbus Avenue line in operation from Ferries to Exposition grounds.

February 19, 1915. California Street line in operation to Thirteenth Avenue.

March 28, 1915. California Street line in operation to Thirty-third Avenue.

April 25, 1915. Beach loop, Geary Street line, commenced operation.

January 24, 1916. Stockton Street branch ("E") in operation from Presidio to Market, Fourth and Ellis Streets.

April 29, 1916. Church Street line (Sect. "C"), Sixteenth to Eighteenth and Twenty-second to Thirtieth Streets, ready for operation.

June 1, 1916. Columbus Avenue ("J" line), Ferries to Exposition grounds, discontinued.

June 12, 1916. Church Street line (Sect. "A"), Van Ness Avenue and Market Street to Sixteenth and Church Streets, started by day labor. Held up by United Railroads injunction.

June 28, 1916. Church Street line (Sect. "B"), Eighteenth to Twenty-second Streets, ready for operation.

December 21, 1916. Potrero Avenue line ("H") extended from Twenty-fifth Street to Army Street. Twenty-two hundredths mile added. Placed in operation January 19, 1917.

August 11, 1917. Church Street line ("J"), Van Ness Avenue and Market Street to Church and Thirtieth Streets, commenced operation.

February 3, 1918. Twin Peaks tunnel line ("K") to Van Ness Avenue and Bush Street commenced operation. (Length of tunnel 11,920 feet.)

May 4, 1918. Greenwich Street extension (Van Ness Avenue line), Scott to Baker Street, commenced operation.

June 1, 1918. Market Street lines ("J" and "K"), Van Ness Avenue to Geary Street, commenced operation, establishing through service, Ferries to Sloat Boulevard.

October 30, 1918. Third loop opened at Ferry terminus.

February 21, 1919. Market Street line ("K") commenced operation over United Railroads tracks on Ocean Avenue to Miramar Avenue.

April 12, 1919. Taraval Street line ("L") commenced operation from West Portal of Twin Peaks tunnel to Thirty-third Avenue, operating co-jointly with the United Railroads on Taraval Street between Twentieth Avenue and Thirty-third Avenue.

May 18, 1919. Market Street line ("K") commenced operation over extension along Ocean and Brighton Avenues to Grafton Avenue.

July 22, 1919. Changed and shortened route of Van Ness Avenue line ("D") and Union Street line ("E") by track connection on Union Street between Franklin Street and Van Ness Avenue.

August 7, 1919. One elevator placed in operation at Forest Hill station of Twin Peaks tunnel.

December 8, 1919. Presidio loop, Van Ness Avenue and Union Street lines, commenced operation.

January 14, 1923. Taraval Street line ("L") commenced operation over extension on Taraval Street, between Thirty-third Avenue and Ocean Beach.

October 15, 1923. Taraval Street line ("L") operated as a through line from Beach to Ferries via Twin Peaks tunnel and Market Street.

October 6, 1925. Line "M" commenced operation between Plymouth Avenue and Broad Street to St. Francis Circle.

February 1, 1928. Second elevator (the largest on the Pacific Coast) installed at Forest Hill station of Twin Peaks tunnel.

October 21, 1928. Line "N" commenced operation between Forty-eighth Avenue and Judah Street and the Ferries.

January 8, 1932. Jurisdiction over the San Francisco Municipal Railway was transferred from the Board of Public Works to the San Francisco Public Utilities Commission under provisions of the new charter.

June 1, 1932. Line "O" commenced operation between Van Ness Avenue and Market Street and the Presidio (a rearrangement of Lines "D," "E" and "H").

July 15, 1932. Line "O" abandoned and lines "D," "E" and "H" placed on their original routing.

December 5, 1932. Line "A" discontinued.

December 5, 1932. Bus Route No. 1 extended to Tenth Avenue and Lake Street.

January 3, 1933. Bus Route No. 2 discontinued.

January 30, 1933. Bus Route No. 1 North Terminal changed to Tenth Avenue and California Street.

December 5, 1933. Bus Route No. 1 South Terminal changed to Edna Street and Monterey Boulevard.

July 28, 1935. Bus Route No. 6 commenced operation. Eureka Valley Station to Diamond and Clipper Streets.

June 30, 1937. Total single track mileage, 82.16 (see mileage statement).

June 30, 1937. Total one-way bus mileage 10.19 (see mileage statement).

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by
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